

**Computer Literacy:
Definition and Survey Items for Assessment
School**

**Malcolm E. Lockheed
Project Director
Educational Testing Service**

**Barry Hunter
Human Resources Research Organization**

**Donald E. Anderson
Instructional Computing, Inc.**

**Edward M. Beazley
National Center for Education Statistics
and**

**Edward T. Esty
Office of Educational Research and Improvement
Project Officers**

September 1983

**Prepared for the National Center for Education
Statistics under contract 400-82-0024 with the U.S.
Department of Education. Contractors undertaking
such projects are encouraged to express freely their
professional judgment. This report, therefore, does
not necessarily represent positions or policies of the
Department, and no official endorsement should be
inferred. This report is released as received from the
contractor.**

As part of Secretary Terrell H. Bell's initiative in computer technology, the National Center for Educational Technology and Science Studies, the Educational Research and Improvement (ERI) program, a multi-year effort to facilitate the system-wide use of computer use and computer literacy in education. The project for the first contract with Educational Testing Service (ETS), the Human Resources Research Organization (HumRRO), and Institute for Educational Development. This volume is the product of the first

The purposes of this initial project were to develop a definition of computer literacy, a glossary of terminology, a short bibliography of current literature, and a pool of questions on the use and application of computers in education are presented here. The pool of questions was developed by groups addressed to superintendents, principals, and teachers in elementary and secondary schools.

As a critical element of the project, a panel of recognized experts in computer use and education was convened. They provided expertise in identifying issues, and ultimately reviewing and revising materials that were developed. The project was most notably the pool of questions, which were developed with the expertise that went into their development.

States, local school districts, educational institutions, and other groups may elect to use some of the questions for insight into the status of computer literacy in their education community. If so, they should

- (1) The pool of questions is large. No one person can be expected to respond to all of the questions. A decision must be made.
- (2) The choices from the pool of the questions should be included in a particular questionnaire for the purposes of the research. Users should define explicitly the purposes of the research and the aspects of computer literacy they are interested in.
- (3) The questions have not been subjected to a formal performance. Consequently, almost no information is available on the performance of the questions, i.e., their validity, or their relationship to the concepts they are intended to measure.
- (4) Computer literacy is a multifaceted concept. Users are warned against trying to add to the pool of questions in an attempt to cover all aspects of the concept.

- (5) All of the questions in this report are self-assessment items, e.g., "How many microcomputers does your school have?" or, "How often do you use the computer when you need information?"
- (6) A further set of questions designed to assess computer literacy of computers was also developed. These so-called "computer literacy items" are available upon request as special items. Although they will eventually be valuable in assessing and enhancing the value of the self-report questionnaire, the items currently do not cover many important aspects of computer literacy.

This report provides an essential first step in assessing the effects of the information revolution on the National Education Goals. Further actions are needed, such as the development of questions that might be used in comparable surveys and testing of these questions. An actual survey using these questions would then yield useful, comparable information on the use of, with, and the potential of, computers in the schools.

NCES will continue to evaluate and refine the questions developed in this project through its own surveys and encourage others who wish to conduct surveys to assess the impact of education.

David Sweet
Assistant Administrator
Division of Multi-level
Education Statistics

Paul
Chick
Lea

Acknowledgments

We gratefully acknowledge the contributions of Dr. Gerritz (ETS), Dr. Margaret Goertz (ETS), Dr. Susan Thomas (Florida State University), Ms. Lorraine Luciano (ETS), Mr. Kenneth Rosenb

Table of Contents

Foreword.....	
Acknowledgments.....	
Introduction.....	
The Purpose of the Project.....	
How the Project Was Conducted.....	
Organization.....	
Project Procedure.....	
Defining Computer Literacy.....	
Developing a Conceptual Structure.....	
Writing Items.....	
Field Testing.....	
The Item Pool and How to Use It.....	
Survey Items.....	
Validation Items.....	
References.....	
Glossary.....	
Index to Items.....	
Questions for School System Superintendents.....	
Questions for Elementary and Secondary School Teachers.....	
Questions for Elementary and Secondary School Students.....	
Questions for Elementary and Secondary School Parents.....	

Introduction

American education is being confronted by changes occurring in the larger society. These are referred to as the "information revolution"--driven by rapid developments and reduced costs in electronics and global information networks. The major impact of this revolution for education has been the introduction of computers into elementary and secondary schools. From fall 1980 to spring 1982 the number of microcomputers in instructional use by public school students tripled in elementary schools and 60% of secondary schools reported ownership (Wright, 1982). With the increasing capabilities and their declining costs, it is not unreasonable to expect that far in the future when all elementary and secondary schools have access to a computer on a regular basis.

The potential that computers hold for education is vast. If properly programmed, computers can facilitate the teaching of a wide range of subjects and can be used as tools in most subject matter areas for both instructional and administrative purposes. As an object of study, computers prepare students for a wide variety of new careers in the computer industry (Technology Assessment, 1982).

Despite the potential utility of computers in education, the apparent speed with which schools have acquired computers is slow. Information regarding computer applications in elementary and secondary schools is limited.

Secretary Bell's initiative on educational technology. The National Center for Education Statistics (NCES) and the Educational Technology Support Staff (ETSS) of the Office of Educational Research and Development initiated a project to facilitate the systematic growth of computer use and computer literacy in elementary and secondary schools. The purpose of this project was to develop a pool of experts who would be used in surveys to provide data that would enable educational policy-making agencies, school administrators, teachers, and parents to make better informed decisions regarding the use of computers in education.

1. Curriculum planning and implementation in schools;
2. Design of inservice and preservice training for teachers and administrators;
3. Development of educational computer equipment and computer-related learning materials;
4. Evaluation and selection of computer equipment and computer-related learning materials.

Although the number of schools that have student-related activities has risen dramatically, little is known about who are using the computers they are being used. Recent surveys of computer schools indicate that the primary uses of computers are programming in BASIC, general "computer awareness" and-practice applications (Becker & Fennesse). Beyond such general types of knowledge, little is known about the uses of computers made by administrators, teachers, and students. However, much of the data that have been gathered are collected differently that little cumulative knowledge exists to solve these problems and help provide more comprehensive information regarding the types of uses of computers and their application in schools, the Department of Education is in the preparation of a pool of questions that will be used in instruments with these objectives.

The pool of questions--referred to here as the "Inventory" consists of three different types. The first type of item is a questionnaire that asks the respondent about his or her computer experience, and use. The second type of item is a checklist whose purpose is to objectively validate the types of computer-related resources in the district. The third type of item is the inventory item that seeks to identify computer-related resources in the district.

The items themselves are addressed to four types of users:

- School district superintendents
- Elementary and secondary school principals
- Elementary and secondary school teachers
- Elementary and secondary school students

The pool of items can be used by federal, state, and local agencies and researchers as a starting point in developing instruments for assessing the status of computer literacy in schools. The items themselves should be relevant to conditions in schools in 1990. Technological changes, of course, may require the development of specific items.

The items are designed to assist in gathering information to answer questions such as the following:

- To what extent have goals for computer literacy been established?
- In what ways are computers being integrated into the curriculum?
- What is the quality and quantity of computer equipment in the schools?
- To what extent and in what ways are superintendents, principals, teachers, and students computer-literate?
- What are superintendents, principals, teachers, and students doing with computers?
- At what grade levels are computers being integrated into the curriculum?
- How do superintendents, principals, teachers, and students keep up with computer-related developments and changes?
- How are equipment, software, and curricula developed and selected?
- How accessible are appropriate computer equipment and learning materials to administrators, teachers, and students?

- What are the policies on computer acquisition?
- How are resources allocated within a district?
- What programming languages are being taught?
- What computer-related training is being provided to whom?
- How are schools evaluating their computing efforts?
- Who makes decisions on such matters as curriculum selection, teacher training, software selection?
- Does the use of computers vary between different schools and communities?
- What are the relationships between computer use in school and computer access outside of school?
- How are parents and communities involved?
- What resources are needed and lacking in order to achieve their goals?

The nature and extent of computer-related activities in schools and school districts, as well as in designing the items, the assumption was made that the study could be conducted several times during the time period, providing information on changes and trends.

Organization

This project was the joint effort of Educational Testing Service (ETS) of Princeton, New Jersey, the Human Relations Research Organization (HumRRO) of Arlington, Virginia, and Instructional Communications, Inc. (ICI) of Minneapolis, Minnesota. ETS, the prime contractor, provided the survey development expertise, and HumRRO and ICI provided the expertise in the area of computer use in education. The purpose of the project was to identify members of a ten-person advisory panel that would guide the project throughout its course.

The Advisory Panel was selected to include representatives from the following groups:

- elementary and secondary teachers
- administrators
- chief state school officers
- the computer industry
- publishers
- professional societies in computing
- post-secondary teachers of computer science

The Advisory Panel was also selected for regional representation, with members from the Far West, the Northwest, the South, and the Northeast. Members of the Advisory Panel represented fields of education, mathematics, engineering, physics and computer science. All have been actively involved in computer-related projects. The Advisory Panel members were:

Dr. William Atchison
Professor, Department of
Computer Science
University of Maryland
College Park, Maryland

Dr. Joseph Caravella
Director of Professional Services
National Council of Teachers of
Mathematics
Reston, Virginia

Dr. Sylvia Charp
President, American Federation of
Information Processing Societies, and
Past Director of Instructional Systems
School District of Philadelphia
Philadelphia, Pennsylvania

Dr. K. Fred Daniel
Director, Strategy Planning
and Management Information Systems
Florida Department of Education
Tallahassee, Florida

Dr. Arthur W. Luehrmann
Computer Literacy, Inc.
Berkeley, California

Recent books on computer use in education
panel include Computer Literacy: A hands-on
and H. Peckham (Webster Division, McGraw-Hill),
Power by J. M. Moshell (Gregg/McGraw-Hill),
Classroom by D. Moursund (John Wiley & Sons),
by J. M. Rice; and Learning with Logo by D.
1983).

During the course of the project, the
times for two day meetings to review

items as they were developed, and the various r
course of the project. Their substantive input
ctioning of the project.

Project Procedure

The study included four major activities: def
veloping a conceptual structure for computer lite
ondary education, writing items to survey and as
field testing the items. Each of these activit
following sections.

Defining Computer Literacy. Computer literacy
ely discussed, but whose meaning has rarely been
adequately reflect the diversity of meaning attr
eracy," a review of previous definitions, comput
lines, curriculum guides, and general goals for
ools was conducted. (See the Reference section
ations of materials reviewed.)

Based on this earlier work, a draft definition
prepared, reviewed, and refined by the Advisory
inition of computer literacy agreed upon by the

"Computer literacy may be defined as whatever
know and do with computers in order to function
our information-based society.

Computer literacy includes three kinds of comp
knowledge, and understanding. It includes:

1. the ability to use and instruct computers
solving problems, and managing information

2. knowledge of functions, applications, and social implications of computer technology; and
3. understanding needed to learn and evaluate and social issues as they arise."

This definition highlights the fact that knowledge and understanding will vary from person to person and from time to time. The term "computer literacy" refers to the specialized knowledge and skills that are required in computer-related fields as computer science, computer engineering, and computer graphics.

The definition of computer literacy used in this study is inherent in the definitions of computer literacy. For example, Ronald Anderson and Daniel Klassen (1982) define literacy as:

"Whatever understanding, skills and attitudes that enable a person to effectively use a given social technology indirectly involves computers."

David Moursund (1982) has proposed that:

"Computer literacy is a working knowledge of computers."

Arthur Luehrmann (1982) has reasoned that:

"If you can tell the computer how to do what you want it to, you are computer literate."

The Layman's Guide to the Use of Computers

the Association for Educational Data Systems (AES) has defined that computer literacy

"is being considered a basic skill and should be taught properly in our society. The ability to use computers to obtain information, solve problems, communicate, and help understand the changes that are taking place in our society."

Because computers are simply tools for handling problems, some have argued that the idea of "computer literacy" be replaced with "information handling literacy." For example, proposed national goals for "information literacy" have been developed. Nevertheless, the phrase "computer literacy" has become a shorthand for computer technology know-how; therefore, it is probable that we will continue to retain the phrase in spite of its deficiencies.

Developing a Conceptual Structure. The development of a framework for computer literacy as it is applied to teachers, and students in elementary and secondary schools is the focus of a review of computer literacy course outlines, curriculum standards, and general goals for computer literacy. This framework identifies the domains of computer literacy skills and knowledge.

1. Administration

Administering computer-related policies and procedures at the school district or school. Includes such tasks as setting computer literacy goals for students; establishing criteria for evaluating software; and assigning responsibility for training.

2. Teaching

Teaching with or about computers. Including such tasks as teaching students how to use computer software; addressing issues with students; assessing students' understanding.

3. Using Programs

Using suitably programmed computers as a tool for learning.

equipment; selecting the appropriate
using a graphics program to graph data
using a word processor to aid in writing

4. Developing Programs

Developing procedures for solving a problem
procedures in a form the computer can
Includes such tasks as defining a problem
commands and instructions to the computer
a computer program.

5. Analyzing Applications

Knowing capabilities and limitations of computers
used for various purposes. Includes
people in the school district use computers
deciding whether to use a computer to

6. Social Issues

Understanding social issues related to computers
Requires awareness of issues such as privacy
job requirements, consumer concerns, safety
"computer errors." Involves identifying
parties in conflict.

7. Concepts and Terms

Understanding of the fundamental concepts of
computers, that are needed to use computers
comfortably. Examples include understanding
stored programs; recognizing common words

the Advisory Panel (1981) included elementary and secondary school system administrators, elementary and secondary school teachers, and elementary and secondary school students.

For each domain, brief descriptions of computer-related task statements") that administrators, teachers, or students were able to perform were developed. For example, one task statement for teachers was to "evaluate and select computer programs to use." These task statements were derived from a review of the literature and overall, more than 250 task statements were prepared. The Panel also rated each task statement for its importance to the group.

Writing Items. A preliminary set of specifications for item development was obtained from the list of 250 task statements, from the conceptual framework, and from an independent review of developed instruments designed to assess the status of computer use. These instruments are cited in the references of this report. The instruments and the draft task statements, draft specifications, and draft items were prepared.

A second set of specifications for item development was developed from a list of substantive questions raised by the Advisory Panel. The questions clarified the need to develop items to investigate the use of equipment, software, training, curricular materials, and other resources available to individuals, classrooms, schools, and

Eight school districts in New Jersey, Pennsylvania participated in the field test. Individual interviews with the superintendent, a secondary and an elementary secondary and an elementary teacher. Students were ten, each of whom responded to a different set of items, however, was answered by only eight elementary and secondary students.

The data from the field test were subjected to quantitative analysis; results of these analyses warranted the revision of the items.

The last four sections of this report contain resource inventory items that may be used in conducting the validation items are not included in order to assist individuals wishing to obtain copies of the validation items following the instructions on page 18.

Survey Items

The pool of survey and resource inventory items is divided into four groups of questions appropriate for teachers, and students. The same or similar items are in the set of items, with similar forms adapted for each group. For example, an item asking whether or not the school has a computer program may appear identically worded in the set of items asking about computer-related policies for the superintendent to answer about district policies, the superintendent to answer about school policies and the teacher to answer about classroom policies. The Index of Items provides a listing of the items and indicates which items appear in each of the four sets. It also indicates items containing parallel, respondent-

Although the sets of items do not constitute separate surveys, the items are arranged in a logical order. Items related to each domain are grouped together, and the items are listed in the order listed above, beginning with "Administrative and Management Resource Inventory." The number of items appearing in each set of respondent, by domain, are shown in Table 1.

n multi-part questions that would be administered
 questions are indicated in the Index as a range of

Table 1: Item Pool of Computer Literacy
 Appropriate for Each Respondent Group

<u>Survey Questions</u>	<u>Respondent Group</u>	
	<u>Superintendent</u>	<u>Principal</u>
Administration	59	
Teaching	18	
Using Programs	105	
Developing Programs	6	
Analyzing Applications	5	
Social Issues	46	
Concepts and Terms	5	
Resource Inventory	<u>4</u>	
Total	248	

The item pool for each respondent group is much larger than the survey instrument should be. To use these items, you will need to draw and one or more instruments developed, as follows:

1. Select those questions from the appropriate item pool for the purposes of your survey. For example, you might select some items from each of the survey, resource, and validation type items. Within the survey, you might select some items from each domain or to represent one or more domains.

2. Determine how long you wish the survey to last. For adults and secondary school students will take 15 minutes for up to 60 minutes; students in primary school at approximately the same rate can be surveyed for 10 minutes. Questions in matrix format will take 1 minute. Each subpart should be counted as a question. The administration time.
3. Determine what demographic or identifying information is needed for the analysis and interpretation of the data. Information might include such respondent characteristics as age, grade, gender, or ethnic identity, or characteristics as size or location.
4. Construct a draft survey instrument that includes any additional questions for obtaining the identifying information, a short introduction to the survey, directions for answering the questions, information regarding to whom and where the survey should be returned when the respondent has completed the survey.
5. The advantage of using items in this pool is that data may be collected in multiple locations. If the use of specific items defeats this purpose, then the items necessary, however, they should be made.
6. Pretest the instrument you have developed on a representative target population, and revise the instrument based on the pretest results.

For detailed information on any of the preceding references on test and survey instrument development, see the following:

Validation Items

Questions were developed for use by those who completed self-report questions in the survey. For example, a respondent who reported that he or she had written many computer programs should be able to correctly answer a question regarding the ability to write a simple BASIC program. For the field test, self-report questions and validation items dealing with the same topic were administered. Of the 420 correlations between self-report and validation items computed, 31% were statistically significant at the .05 level, which is 3 times more than would be predicted by chance. Since the respondent sample was extremely small, the degree to which the validation and self-report items may actually correlate is unknown.

In order to keep the validation items secure and for maximum use to researchers, they are not included in the manual. They can be obtained by writing for:

1983 Computer Literacy Validation Items
National Center for Educational Statistics
Attention: Brown Building, Room 2020
400 Maryland Avenue, SW.
Washington, DC 20202

A statement of nondisclosure must be agreed to by those who use the validation items.

The validation items do not constitute a test of computer literacy, and should not be regarded as an assessment of the domains, and should not be regarded as an assessment of computer literacy. Their purpose should be only to provide a means of validation for the self-report items.

self-report questions on the survey. The psych
these items are unknown, as the items have not
sizeable respondent group and statistics have

References

- erson, R., & Klassen, D. A conceptual framework for literacy instruction. AEDS Journal, 1981, 14(3), 1
- erson, R., Klassen, D., Krohn, K., & Smith-Cunnie, computer literacy (Final Report). St. Paul, Minnesota: Educational Computing Consortium, 1982.
- ker, H.J. Microcomputers in the classroom--Dreams (Report No. 319). Baltimore, Maryland: Center for of Schools, The Johns Hopkins University, 1982.
- ker, H.J., & Fennessey, J. How are schools using m First report from a national survey. Paper presented at American Educational Research Association annual meeting, S., Bozeman, W. C., Altschuler, H., D'Orazio, R. Layman's guide to the use of computers in education Association for Educational Data Systems, 1982.
- Course goals in computer literacy. Portland, Oregon: Goal Development Project, 1979.
- r, J., Melmed A., & Farris, E. Student use of computers Fall 1980 (FRSS Report No. 12). Washington, D.C.: for Education Statistics, 1980.
- ter, B., & Hargan, C. Instructional computing: Text studies. Alexandria, Virginia: Human Resources Research, 1978.
- ter, B. My students use computers: Computer Literacy curriculum. Reston, Virginia: Reston Publishing Co.

Licklider, J. C. R. National goals for computer

R. E. Anderson, & B. Hunter (Eds.), Computer Literacy.
Academic Press, 1982.

Luehrmann, A. Part IV: Computer literacy: W
Electronic Learning, May/June 1982, 1(5), 2

Moursund, D. Personal computing for elementary
students. In R. J. Seidel, R. E. Anderson, &
Literacy. New York: Academic Press, 1982.

Office of Technology Assessment, Informational Technology
on American education, U.S. Government Printing
D.C., 1982.

Pohl, L., & Shaw, A. The nature of computer science.
Computer Science Press,

Poirot, J., Taylor, R., & Powell, J. Teacher
Computer Education for Elementary and Secondary Schools
of the ACM. New York: Association for Computing Machinery,
January 1982, pp. 18-27.

Ragsdale, R. G. Computers in the schools: A guide for Ontario.
Ontario, Canada: OISE Press, 1982.

Seidel, R. J., Anderson, R. E., & Hunter, B. Computer Literacy.
Academic Press, 1982.

U.S. Department of Education, National Center for
Instructional Use of Computers in Public Schools

Watt, D. Education for citizenship in a computerized society.
Seidel, et al., Computer Literacy. op cit.

Wright, D. Instructional use of computers in
Release). Washington, D.C.: National Cent
1982.

access: Used either as a verb or noun system or the acquisition of data from a s

advanced computer programming: Courses in programming skills and solve more complex. These might involve, for example, complex

ALGOL: ALGOritmic Language. A high level may be precisely presented to a computer

algorithm: A defined process or set of of a desired output from a given algebraic/logical steps to calculate rules.

analog: Representation of information continuous manner with respect to representation of information.

APL: A high level programming language, used in conjunction with statistical data

Apple DOS 3.3: A Disk Operating System fo

application: Use of a computer for a p application.

application package: A program, or se particular application, or task (as in data analysis).

assembly language: A programming language a single machine language instruction. code.

authoring language: A high-level computer by authors or writers as distinguished are often written in an authoring language

authoring language programs: Computer pr called an authoring language. Some instruction.

back-up copy (of program or file): A se form, which allows a user to retain info or damaged.

BASIC: Beginner's All-purpose Symbol

computer hardware: The essential mechanical, electrical devices which go to make up a computer.

bit: An acronym for binary digit. Represents the smallest unit of information corresponding to, eg 0 or 1; 'on' or 'off'; 'signal' or 'no signal'. Information is represented as a series of bits.

PCB: See printed circuit board.

programs: Computer programs used to assist in the operation of a computer. They involve such operations as file processing, data entry, procedures for operating or quality control, etc.

byte: A group of adjacent bits, usually 8 bits, operating as a single alphabetic character.

Computer-Assisted Instruction (CAI): Instruction in which the computer acts as a 'teaching machine'. The computer presents instructions, evaluates student's progress, tailors instruction to the individual student.

card: A card of standard size, thickness and shape, used to store information and feed it into a computer.

card reader: A device which perforates cards in a specific sequence, either of a computer, or of a user at a terminal, to produce instructions which give the computer instructions.

input device: A device which permits the sensing of information from the user and converts this information into electronic messages.

storage device: A portable container for film or magnetic tape, used to store programs or data into a computer.

Cathode ray tube (CRT): An electronic display device, used to display information including graphics. It is also known as a "display" or "video display."

Computer-Based Instruction (CBI): Same as CAI.

Central processing unit (CPU): The "brains" of a computer, responsible for arithmetic, logic and control operations.

chip: A small description of a single integrated circuit. It is typically 1 and 5cm in length, and having between 6 and 100,000 transistors. A chip normally found in computer systems is called a microprocessor.

Computer-Managed Instruction (CMI): Some applications of computer-based instruction, such as testing, diagnostic, etc.

COBOL: Common Business Oriented Language. designed especially for manipulation of business data. It is a language related to ordinary English words.

compile: To translate a high level language into machine instructions for the computer.

compiler: A computer program which replaces high level language instructions, usually called subroutines. The process of compiling is a translated and expanded version of an **interpreter**.

Compuserve: An organization that provides computer telecommunications. Sometimes referred to as CompuServe.

computer: An electronic device which receives and processes data and operates on them according to a program, and produces results.

Computer-Assisted Instruction: See "CAI."

computer awareness: Introductory-level knowledge of computer capabilities, how they work, limitations, applications.

Computer-Based Instruction: See "CBI."

computer coordinator: In a school or school district, a person who coordinates computer-related activities such as equipment management, computer-related training of teachers, or computer-related research.

computer education: Education about computer concepts, data processing, or other computer-related subjects.

computer entry: An input to a computer from a user.

computer error: A status word indicating that a program has encountered an error and awaits a correction. Informally, mistake or fault in a computer system or application.

computer interaction: The interaction of a user with computer devices such as a keyboard or joystick and the computer display.

Computer-Managed Instruction (CMI): see CMI

computer programming: The development of a computer program to carry out a desired sequence of operations, normally the solution of a problem.

Computer-related Learning Materials: Texts, tapes, and other materials used in teaching about computers.

subjects.

curriculum specialist: In a school or school district, a specialist who designs or modifies in computer-related educational curricula or materials.

computer science: The entire spectrum of theoretical and practical knowledge related with the development and application of computers.

algorithm: A generic term for all mathematical and logical procedures leading to precise rules of procedure.

firmware (microprocessor): A specific designed program that controls the CPU through the various operations. It is permanently stored in ROM memory where it can be accessed to perform various operations.

converter: A device which converts data from one physical form, such as punched card to magnetic tape.

CPM (Control Program/Microcomputer): An acronym for Control Program/Microcomputer. A variety of microcomputers.

CPU (Central Processing Unit): An abbreviation for central processing unit.

CRT (Cathode-Ray Tube): An abbreviation for Cathode-Ray Tube.

highlight: A highlighted mark appearing on the computer screen or underscore character which indicates where data will be recorded.

Data: Groups of characters (alphanumeric or other) that represent a specific value or condition. Data provide the building blocks for information.

Database: A store of data on files which can be made available to users. Designed for operation in connection with an information system.

Database programs: Computer programs used to create, update, and to retrieve information from the data base.

Data communication: The transmission and reception of data in the form of magnetic signals to a computer.

Data communication equipment: The data communication system consists of five elements: a transmitter or source of data, a data link or serial interface; a communication channel or medium for the transmission of information. A data communications interface is a hardware or software serial data compatible with the communication system.

Code: The writing, reading, or posting to a code.

data processing: Includes all clerical, arithmetic, and data processing in the context of information. The use of a computer for these operations.

data storage: The processes of storing information.

data terminal equipment: Any piece of equipment which begins or ends a data transmission.

debug: Isolate and correct errors in a computer program.

delete, a program: To **purge**, or erase a program.

disk drive: A device which reads from, or writes to, a disk.

documentation: Written information about hardware and software that contained in a user's guide.

drill-and-practice: A class of computer application that presents questions or problems, accepts and evaluates answers, and gives some kind of feedback to the student. The program adapts to students' level of ability, speed, or interests.

editing, text: Facilities designed into a computer program for rekeyboarding of textual copy without regard for line length or publication. Once the copy has been placed in a buffer, it can be moved and justified into any required column width and line length. See also **word processing**.

DUNET: A computer-and-communications network serving the University of New England.

electronic chalkboard: Teacher's use of a computer program similar to a chalkboard, i.e. to present material and demonstrate a concept.

electronic data services:

electronic mail: A general term covering the transmission, distribution, of messages. Unlike a telephone message, it is transmitted at one time, stored in a computer and retrieved at a later time.

electronic theft: Theft or illegal use of information.

emulator: Hardware or software which makes a system appear to be another system. For example, a program can emulate a telex, or a computer of one type may be used to emulate a different type of computer.

A section of a computer record which is described information. For example, in a bibliography the data positions where the dates of publication are located.

An organized structured, and named collection of data.

management program: A computer program which assigns data files, and enables them to be called up.

disk: A disk made of a flexible material, with a magnetic surface onto which information is encoded magnetically. Usually either 5 1/4 inches or 8 inches in diameter.

disk drive: See "disk drive."

chart: A chart to represent, for a problem, the data, equipment, methods, documents, machine instructions.

statements: A predetermined arrangement of data, to: the layout of a printed document; the arrangement of instructions in a program. It can also refer to data available at a keyboard.

FTN: An abbreviation for FORMula TRANslator. It is extensively used for scientific and mathematical calculations.

function keys: Specific keys on a terminal keyboard which execute commands at a single key stroke. These keys are user-defined, or come already programmed.

light pen: An input device which is popular to use for pointing (or cursor) on the video monitor.

hard-copy plotter: A device which provides hard-copy of graphics produced by computer.

graphics programs: Programs or routines that produce visual representations of data. They range from a simple graph on a teletypewriter to complex systems with multi-dimensional displays, complete with legends--and fonts.

graphics tablet: A device for inputting graphics. Charts or free-hand drawings can be created, and stored on a screen. The tablet can also be used to transfer data to a storage device for subsequent recall, or to a plotter.

hard disk: A circular metal plate with magnetic coating, continuously rotated for reading or writing by means of a head.

Hard disk drive: See "disk drive."

Hardware: The mechanical, magnetic, electronic and other parts that make up a computer. Central processing units, disk drives are examples of hardware.

High level programming language: A computer language with notation with which they are already familiar, such as BASIC, FORTRAN, COBOL, etc. Each natural language instruction is translated into machine code instructions.

Information retrieval: Technology and methods for searching through large quantities of information.

Input: Information received by a computer, or information sent to the computer.

Instruction: A command to a computer to carry out a task.

Instructional games: Game-like computer programs designed for a purpose or intent. May involve competition between two or more students.

Item: A unit of information relating to a single record within a database.

Interface: A general term to describe the connection between systems. Most frequently refers to the hardware that connects two processing elements in a computer system.

Internal memory capacity: The amount of information that a device has direct access to.

Interpreter: A computer program that translates a high-level language to machine code and executes it.

Joystick: A lever whose motions control the movement of a cursor on a VDU.

Keyboard: A device equipped with an ordered array of keys that are used to encode data or instructions. A standard keyboard.

Language: A set of representations and rules by which information is communicated within, and between, computers, or between computers and humans.

Language interpreter: A general term for any program that accepts statements in one language and translates them into statements in another language.

a user and a computer.

list: 1. A series of records in a file. 2. the a (without performing any additional processing).

load: To enter information, or a program into a comp

log on/off: To initiate, or terminate on-line intera

Logo: A high-level computer programming language or learning environment for children. Used to teach thinking, recursion, debugging, graphing.

machine readable form: Capable of being read by a co

magnetic tape drive: See "tape drive."

math or statistics computation: A computer program statistical operations.

memory: A device into which information can be computer when required.

memory location: A specific position in computer mem

microcomputer: A small (desk top) computer which processing element. Often used loosely to refer to

modem: An abbreviation of modulator-demodulator. digital signal (generated, for example, by a comput modulation. In this form, the signal can be t telephone line. The received signal can be reconver the same device.

modulation: The addition of information to an electr wave).

monitor: Hardware or software used to monitor the ac

mouse: A device which an operator can move over tablet. Its position is recorded by the computer, a and illustrations about.

music board: A Printed Circuit Board that contains and music in a computer.

MS-DOS: A disk operating system that runs on IBM computers that are compatible with the IBM PC.

line: Any use of equipment to interact directly with a computer.

Operating system: Software that manages the computer, allowing the user to run programs and control operations.

Optical scanner: A special optical device which generates analog/digital signals which are synchronized with the scan, the primary purpose is to create digital representations of printed or written data.

Output: Information transmitted by a computer, inside or outside the world. It may, for example, be in the form of a screen or paper tape.

Unit capability: The number of unit loads that a computer can handle.

System: An operating system available for several users.

Commercial computer program: Computer program developed by commercial publishers, for distribution and sale.

Paper tape punch: A device which punches paper tape.

Parallel Interface: A specific plug-and-socket interface for a computer system, like a printer and the properties, serial and parallel. A serial interface transmits data one bit at a time, serially. A parallel interface uses multiple lines to transmit each bit in a character simultaneously. A parallel interface uses a 4-bit pattern to encode one character, the 4-bit pattern is transmitted over 4 wires, each carrying one bit. Parallel interface can transmit over eight bits at a time instead of one.

AL: A language designed to enable teaching of programming discipline and to do systems programming. Basic language for teaching aspects of structured programming.

Word: A group of characters which a user inputs to the system. Used to protect a computer system.

DOS: See MS-DOS.

Test: An original or test program, project, or assignment used for computer-assisted instruction.

Exit: A place of entry to, or exit from, a central processing unit.

ter: An output device which converts electronic s

essing, data: See "data processing."

ram: An ordered list of instructions directing
red sequence of operations. The objective is
lem.

ram file: 1. A flexible, easily updated referenc
the entire software library. 2. A named fil
inguished from a data file.

rammer: 1. One who prepares programs for a
ares instruction sequences without necessarily
iled codes. 3. A person who prepares prob
charts and who may also write and debug routines.

ramming language: A specific language used to
e are hundreds of programming languages.

ocol: A set of conventions between communicating
ents of messages to be exchanged.

ocol emulator: A software package that allows a
a variety of foreign (nondigital) vendor
unication protocols of the foreign host.

e: To erase data from a file.

Report-Program Generator. A high-level program
rts from computer data files.

e check: On some systems, this seeks the prese
es or entries that data must fall within.
ists of a low- and a high-data value in table loc

/write head: An electromagnetic device used to
etic storage device such as a disk or tape.

ords: A unit, or set of data, forming the basic el

ational programs Computer programs designed for

ne, a program or file: Instruct a computer to g
name.

memory: Read-Only Memory. Can not be erased or m

1. One execution of a computer routine. program

save: To store a record, file, or program on a semi-permanent storage medium.

screen: 1. A display device used to view computer presentation of information on a screen, analog or digital.

Serial (RS-232) interface: The interface between a computer terminal equipment, and standardized by Electronic Industries Association standard RS-232.

serial interface: Serial interfaces are widely used in computers; they are technically simpler than parallel interfaces over longer distances. See also "parallel interface".

simulation: The representation of the behavior of a system or phenomena by computers, models, or other equipment.

software: The instructions, programs, which are executed by a computer. Distinguished from **hardware**.

software package: A generalized program, or set of programs, to meet requirements of a number of users.

spreadsheet: A class of computer programs that allow the user to enter formulas in a "spreadsheet" format, i.e. in rows and columns.

storage: 1. A storage device, or the medium on which data is stored. The process of storing information.

stylus: 1. Synonym for light pen. 2. Device used to input information on a tablet to input and manipulate graphical information.

system: An organized set of components which interact to perform a function.

system utilities: A system or program that is used to perform system or utility functions such as copying or printing.

tape: A strip of material that may be punched with holes, or magnetic or optically sensitive substances, and used for data input or output.

tape drive: A device that moves tape past a read/write head to store information on the tape.

telecommunication programs: A program which performs the transmission of signals, writing, sounds, or intelligence over a radio beam, or any other electromagnetic means.

the editing of text on a computer. It may be carried out, from a mainframe with appropriate software to

an organization that provides computer and information services, sometimes called an "information utility."

Operating system for Tandy Radio-Shack computers.

Option, an operating system that runs on mainframe computers.

A class of instructional computer programs that perform the function of a tutor, i.e. presents information to the learner, evaluates student answers, and tailors instructional materials to the needs of the learner.

A programming operating system developed at Bell Laboratories, which includes software and text-developing utilities.

1. The person who is using a computer. 2. The person or organization that provides a time-shared computer system for the purpose of computer operation by the computer.

Style: A system with characteristics, or style, that is pleasant to interact with the computer.

Organizations made up of users of various computing systems who have the opportunity to share knowledge they have gained in using computers and exchange programs they have developed.

Library System.

Display unit. A device, like a television screen, that displays information from a computer. See also "screen."

Printer: A device used for the production of speech or text from a computer.

Text handling. Handling of text via computer. Includes such operations as entering text electronically, formatting documents, and printing.

Text processing program: A computer program used by a person to perform operations such as editing, revising, formatting and printing text documents, reports, or books.

Operating system that runs on some microcomputers, including the operating system called UNIX.

Questions About Administering Computer-Related

Superintendent

* 1
 * 2
 * 3
 * 4
 * 5
 6
 -
 * 7
 -
 * 8
 * 9
 * 10
 * 11
 * 12
 -
 * 13
 -
 * 14
 -
 * 15
 16
 * 17
 * 18
 * 19- 29
 * 30
 * 31
 * 32- 33
 * 34- 36
 * 37
 * 38
 -
 39- 47
 48- 59

Principal

* 1
 * 2
 * 3
 * 4
 * 5
 -
 6
 * 7
 8
 * 9
 * 10
 * 11
 * 12
 * 13
 14
 * 15
 -
 * 16
 17- 37
 * 38
 39
 * 40
 * 41
 * 42- 52
 * 53
 * 54
 * 55- 56
 * 57- 59
 * 60
 * 61
 62
 63- 71
 72- 83

Questions About Teaching With or About Computer

Superintendent

-
 -
 -

Principal

-
 -
 -

Supintendent	Principal	Teacher
	-	36
	-	37
	* 84-109	* 38- 63
	110-124	-
68	125-133	64- 72
74	134-139	73- 78
	140	-
	141	79
	*142	-
	143	-
	-	80- 81
	-	82
	-	83

About Using Computer Programs

Supintendent	Principal	Teacher
	144	84
	-	85
	-	86- 87
105	*145-171	* 88-114
129	172-195	115-138
	*196	-
141	197-207	139-149
	-	150-159
151	208-217	160-169
	*218	*170
	219	-
	220	-
	-	171
	-	*172
	-	173
	-	-
	221	174
172	222-238	175-191
	239	192
	240	193
	241	194
	242	195
181	243-247	196-200
	-	201
	248	202
	-	203

5. Questions About Developing Computer Program

Superintendent	Principal
183	249
184	250
185	251
186	252
187	253
188	254
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

6. Questions About Analyzing Computer Applicat

Superintendent	Principal
*189	*255
*190-191	*256-257
*192	*258
*193	*259 .
-	260

7. Questions About Understanding Social Issues

Superintendent	Principal
194-214	261-281
*215	*282
*216-224	*283-291
*225-227	*292-294
*228	*295
*229	*296
230	297
*231	*298
232	299
*233	*300
234-239	301-306

tions About Understanding Computer-Related Concep

Superintendent	Principal	Teacher
240	307	273
241-244	308-311	274-277
-	-	*278
-	-	*279
-	-	*280
-	-	*281
-	-	*282

tions That Inventory Computer-Related Resources

Superintendent	Principal	Teacher
-	312	-
*245	*313	-
-	314-320	-
-	321	-
-	322	-
-	323	-
-	324	-
-	325	283
-	326	-
-	-	284
-	327-332	-
-	333-336	-
-	337	-
-	338	-
-	339-347	-
-	348-350	-
-	351	-
-	352	-
-	353-356	-
-	357-360	-
-	361	-
-	362	-
-	363-372	-
-	373	-
-	374	-
-	375	-
-	376	-
-	377	-
246-248	-	-

COMPUTER LITERACY

QUESTIONS FOR SUPERINTENDENTS

1. Does your district have written goals for student computer literacy?

_____ Yes, in place

_____ Yes, in progress

_____ No

_____ Don't know

2. If yes, which goals have been established in your district for computer education? Check all that apply.

_____ Computers to be used as a functional tool by students in a wide variety of subject areas

_____ Computers to manage the educational process and provide individual prescriptions to each student

_____ Computer science courses to be offered

_____ Data processing courses to be offered

_____ Computers to be used in conjunction with other educational resources

_____ None of the above

_____ Don't know

3. Does your district have written policies concerning computer utilization?

_____ Yes

_____ No

_____ Don't know

4. If yes, which of the following areas do cover? Check all that apply:

- ☐ Integration of computer-related le
existing curricula
- ☐ Sharing of equipment
- ☐ Development of computer software
- ☐ Standardization of hardware and so
- ☐ Loaning computers to students or s
- ☐ Graduation requirements
- ☐ Recreational use of computers
- ☐ Not applicable

5. What has been instrumental in developing activity in your district? Check all th

- ☐ Business/community initiative or s
- ☐ University/college assistance
- ☐ Federal funding
- ☐ State assistance
- ☐ Local appropriations
- ☐ Administrative initiative or suppo
- ☐ Teacher initiative or support
- ☐ Student initiative or support
- ☐ Local board policy
- ☐ Parent initiative or support
- ☐ We have no computer-related activi

6. If you have no computer-related factors have delayed your district Check all that apply:

_____ Cost factors

_____ How district budgets are org

_____ Need for more planning

_____ Equity issues

_____ Active opposition

_____ Lack of trained personnel

_____ Lack of adequate software

_____ Lack of adequate hardware

_____ All of the above

_____ Other _____

7. Which, if any, of the following courses Check all that apply:

_____ Introduction to Computing

_____ Computer Science

_____ Computer Programming

_____ Word Processing

_____ Data Processing

_____ None of these courses

8. Does your district have specific computer-based systems and/or current

_____ Yes

_____ No

9. Does your district have a special procur
computer equipment?

_____ Yes

_____ No

_____ Don't know

10. Does your district have specific policie
ing parental input to computer-related d

_____ Yes

_____ No

_____ Don't know

11. In what way are parent groups involved w
district? Check all that apply.

_____ Providing organized community supp

_____ Funding hardware or software purch

_____ Serving as teacher aids

_____ Helping with planning for computer

_____ Using school computers at home wit

_____ Writing computer programs

_____ Fund raising for computer-related

_____ Providing individual support

_____ Other _____

12. Has some non-school group, such as a c
sponsored a project that supported the
district?

_____ Yes

_____ No

_____ Don't know

13. For which of the following items are t
your district? Check all that apply:

_____ Computer hardware (keyboards, mo
drives, printers, graphic tablet

_____ Computer software and courseware

_____ Teacher training related to hard

14. How are computers used to support inst
Check all that apply:

_____ Used for teaching and learning

_____ Used for instruction in programs

_____ Used as a tool in various subject

_____ Used for computer-managed instr

15. In your district, are there specific rules following? Check all that apply:

- ☐ Protecting equipment from damage
- ☐ Protecting equipment from loss
- ☐ Destroying another person's data
- ☐ Disrupting the operation of the computer
- ☐ Scheduling or sharing equipment
- ☐ Scheduling or sharing programs
- ☐ Copying copyrighted programs
- ☐ Copying other students' graded computer work

16. When school is closed either for the summer or for other reasons, what is your policy regarding computers? Check all that apply:

- ☐ Send computers home with students
- ☐ Allow teachers or administrators to borrow
- ☐ Distribute them to other selected individuals
- ☐ Lock them up for safekeeping
- ☐ Leave them in their assigned location
- ☐ Use them for school or district training or development
- ☐ Send them out for maintenance
- ☐ Use them in summer camp
- ☐ None of the above

17. What procedures does your district use to select computer-related learning materials?

_____ An evaluation committee reviews materials

_____ A computer coordinator or materials specialist reviews materials

_____ We rely on salespersons' recommendations

_____ We rely on external evaluations from state or local education departments

_____ A supervisor or administrator reviews materials

_____ A media specialist reviews materials

_____ We rely on teacher recommendations

_____ Other _____

18. Which of the following are methods used by your district to assess students' skills in the following topics? Check all that apply:

_____ Standardized tests

_____ Teacher-made tests

_____ Questionnaires

_____ Project evaluations

_____ Teachers' observations

_____ Others' observations

_____ Other _____

Has your district investigated how computers can be used for
of the following administrative purposes?

Investigated

- | | | |
|-----|----------------------------------|---|
| 19. | Attendance | o |
| 20. | Student records/
report cards | o |
| 21. | Payroll | o |
| 22. | Accounting | o |
| 23. | Inventory | o |
| 24. | Printing mailing labels | o |
| 25. | Electronic mail to staff | o |
| 26. | Electronic mail to parents | o |
| 27. | Student scheduling | o |
| 28. | Student testing | o |
| 29. | Personnel records | o |

30. Which of the following are you currently using for administrative computing needs of your district?

_____ Our own district mainframe computer

_____ Our own district microcomputer(s)

_____ A multi-district or regional public computer

_____ A commercial computer service

_____ Other _____

_____ We do not use computers for administrative purposes

3. Does your district use computers for career

_____ Yes

_____ No

_____ Don't know

4. Does your district have an assigned computer responsible for computer use in instruction?

_____ Yes

_____ No

_____ Don't know

5. If yes, who assigned the computer coordinator

_____ Superintendent/Board of Education

_____ Principal

_____ Other Administrator

_____ Teachers

6. Has your district offered training in introduction to computer programming or computer science to

_____ Yes

_____ No

_____ Don't know

7. If yes, who was responsible for arranging for

_____ Superintendent

_____ Assistant Superintendent/Curriculum Supervisor

_____ Principal

_____ Teachers

36. If yes, what staff was eligible for tra

_____ Teachers

_____ Support staff

_____ Administration

37. Does your district provide release time
teachers who develop computer-based ins

_____ Yes

_____ No

_____ Don't know

38. How do you disseminate information conc
in your district? Check all that apply

_____ Newsletters

_____ Computer fairs

_____ Computer open house

_____ Press releases

_____ Letters to parents or staff

_____ Faculty meetings

_____ Visits to other institutions

_____ Demonstrations of new equipment/co

_____ Conferences or meetings

_____ Workshops

_____ None of the above

How influential are the following persons o
deciding what computer-related courses are
students?

Very
Influential

- | | | |
|-----|---------------------------------|-----------------------|
| 39. | The Superintendent/School Board | <input type="radio"/> |
| 40. | School principals | <input type="radio"/> |
| 41. | Computer coordinator/specialist | <input type="radio"/> |
| 42. | Teachers | <input type="radio"/> |
| 43. | Parents | <input type="radio"/> |
| 44. | Supervisors | <input type="radio"/> |
| 45. | Local businesses | <input type="radio"/> |
| 46. | Students | <input type="radio"/> |
| 47. | Other _____ | <input type="radio"/> |

	Superintendent	Assistant Superintendent
48. Deciding what computer-related skills and knowledge are to be learned by students	o	o
49. Determining computer-related course offerings	o	o
50. Establishing budgets for computer-related projects	o	o
51. Planning staff training	o	o
52. Implementing staff training programs	o	o
53. Evaluating and selecting computer hardware	o	o
54. Evaluating and selecting computer software	o	o
55. Determining procurement process	o	o
56. Assigning computer use	o	o
57. Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o
58. Evaluating student benefits from computer-related programs	o	o
59. Communicating with parents and school board re course content, fund-raising		

From your experience with using computers which of the following have you found to be

60. Lack of access to terminals or microcomputers
61. Lack of student interest
62. Low quality of educational software
63. Reallocation of funds to computers from more pressing needs
64. Difficulty with integrating computer-taught skills with the remainder of the curriculum
65. Difficulty with managing student use of computers
66. Lack of teacher or staff training
67. Lack of teacher or staff interest
68. Lack of administrative support

From your experience with using computers which of the following have you found to be

69. Providing immediate feedback
70. Having great patience
71. Keeping the learner actively involved
72. Providing self-paced instruction
73. Keeping records of student performance
74. Providing, through simulations, experiences otherwise not possible in the classroom

75. Have you personally written or teaches or provides instruction

_____ No

_____ Yes, 1 program

_____ Yes, 2-5 programs

_____ Yes, 6 or more programs

76. Which of the following sources you use at least once a month?

_____ Newspaper articles

_____ Weekly computer periodicals

_____ General computer periodicals
magazine, Consumer Reports

_____ Educational computing periodicals
(ing, Classroom Computer Journal)

_____ Professional periodicals

_____ Software catalogs

_____ Regional teacher training

_____ Colleagues and friends

_____ Formal classes or workshops

_____ "User" or other professional

_____ Electronic data services
(CompuServe, EDUNET)

_____ Magazines delivered on electronic

_____ Television/radio

_____ Other _____

77. What has been the primary source of computer material for your district? Check one:

☐ Computer manufacturers or distributors

☐ Published texts

☐ Materials developed by other schools

☐ Material developed within our school

☐ Public domain materials

☐ Professional literature

QUESTIONS ABOUT USING COMPUTER PROGRAMS

78. What types of computer-related courses or programs have you offered since September 1981? Check all that apply.

☐ Learning a programming language (such as BASIC)

☐ Learning word processing

☐ Learning computer science

☐ Learning research applications

☐ Learning data processing

☐ Learning business applications

☐ A general introduction to computing

☐ Learning about computer software

☐ Learning about computer hardware

☐ Learning authoring languages

☐ Other, please specify _____

☐ None

Which of the following computer resources are available in your district?

Available

79. Card punch
80. Card reader
81. Color monitor
82. CRT or other video monitor
83. Floppy disk drive
84. Graphics plotter
85. Graphics tablet
86. Hard disk drive
87. Joystick or game paddle
88. Light pen
89. Magazines
90. Magnetic tape drive, including cassette
91. Mainframe computer
92. Microcomputer
93. "Mouse"
94. Music board
95. Optical scanner
96. Paper tape punch
97. Paper tape reader
98. Parallel or serial interface
99. Persons to assist
100. Printer
101. Reference books and manuals
102. Telephone modem
103. Textbooks
104. Voice synthesizer
105. Other

Which of the following computer devices have you operated?

	<u>Used</u>
06. Card punch	<input type="radio"/>
07. Card reader	<input type="radio"/>
08. Color monitor	<input type="radio"/>
09. CRT or other video monitor	<input type="radio"/>
10. Floppy disk drive	<input type="radio"/>
11. Graphics plotter	<input type="radio"/>
12. Graphics tablet	<input type="radio"/>
13. Hard disk drive	<input type="radio"/>
14. Joystick or game paddle	<input type="radio"/>
15. Light pen	<input type="radio"/>
16. Magnetic tape drive, including cassette	<input type="radio"/>
17. Mainframe computer	<input type="radio"/>
18. Microcomputer	<input type="radio"/>
19. "Mouse"	<input type="radio"/>
20. Music board	<input type="radio"/>
21. Optical scanner	<input type="radio"/>
22. Paper tape punch	<input type="radio"/>
23. Paper tape reader	<input type="radio"/>
24. Parallel or serial interface	<input type="radio"/>
25. Printer	<input type="radio"/>
26. Telephone modem	<input type="radio"/>
27. Voice synthesizer	<input type="radio"/>
28. Other _____	
29. _____ I have not used any of these devices	

130. Are microcomputers being used with video
videodisc players in your district?

_____ Yes, with videocassette recorders

_____ Yes, with videodisc players

_____ Yes, with both

_____ No

How often do you personally use the fol
need information regarding how to use a

Oft

131. Manuals supplied by the hard-
ware company or publishers

132. Technical assistance from the
vendor

133. School or district-level
technical assistance

134. "Users" group

135. Tutorial programs

136. Friends/colleagues/family

137. Reference books

138. Independent technical assistance

139. Professional periodicals

140. Commercial periodicals

141. Local professional organizations

When initially considering "packaged" computer programs, which factors are most important are each of the following?

- | | <u>Very
Important</u> |
|--|---------------------------|
| 142. The reputation of the program | o |
| 143. The purpose of the program | o |
| 144. The data needed to use the program | o |
| 145. The equipment needed to run the program | o |
| 146. The "user-friendliness" or ease of use of the materials | o |
| 147. The author or source of the program | o |
| 148. Length or complexity of the documentation | o |
| 149. Completeness | o |
| 150. Other, please specify _____ | |
| 151. _____ I do not evaluate computer programs | |

152. Given the computer hardware in your dis
kinds of programs are available for you
all that apply:

 Simulations

 Business programs (e.g., spreadsh

 Math or statistics computation

 Text editing or word processing

 Tutorial programs

 Drill-and-practice programs

 Data base or file management prog

 Graphics programs

 Authoring language programs

 Telecommunication programs

 Compilers

 Recreational programs

 System utilities

153. Do you have a single-user microcomputer
your office?

 Yes

 No

154. Does your secretary have a single-user
terminal to use at work?

 Yes

 No

155. Where do you have access to a computer out
all that apply:

_____ I do not have access to a computer o
_____ school

_____ At home

_____ At a friend's home

_____ At someone's place of work

_____ At a college or university

_____ At a library

_____ Other, please specify _____

Where have you used the following kinds of
packages?

	<u>School</u>
156. Accounting	o
157. Authoring	o
158. Business	o
159. Communications	o
160. Computational	o
161. Data base management	o
162. Educational	o
163. Graphics	o
164. Home management	o
165. Integrated packages	o
166. Recreation	o
167. Simulations	o
168. Spreadsheets	o
169. Statistical analysis	o
170. Telecommunications	o
171. Utility	o
172. Word processing	o

173. Which of the following sets of keys do you personally operate by "touch" typing?

_____ Alphabetic

_____ Numeric

_____ Function (for example, "enter")

_____ None

174. How often do you personally use a computer dedicated to word processing?

_____ Never

_____ Rarely

_____ Monthly

_____ Weekly

_____ Daily

175. How long have you personally been using a dedicated word processor (not a general purpose computer)?

_____ I have not used a word processor

_____ Less than one month

_____ Two to four months

_____ Five months to a year

_____ 13-24 months

_____ More than 2 years

176. For which of the following types of documents did you use a word processing program or a computer for making decisions? Check all that apply:

☐ Memoranda

☐ Letters

☐ Short reports (up to 19 pages)

☐ Long reports (20 or more pages)

☐ Other _____

☐ Not applicable

Which of the following outputs from a computer did you produce or had produced for making decisions?

	<u>Produced</u>
177. Spreadsheets	<input type="radio"/>
178. Charts and tables	<input type="radio"/>
179. Graphs	<input type="radio"/>
180. Drawings	<input type="radio"/>
181. <input type="checkbox"/> I have not produced any of these	

182. Computers are frequently used to access the following types of data bases have. Check all that apply:

_____ I have not accessed any data base

_____ Career information

_____ Bibliographical citations (library)

_____ Stock market

_____ School or district data (personnel inventory, etc.)

_____ Student records

_____ National press wire services

_____ Electronic bulletin board

_____ Computer courseware or other educational resources

_____ Recreational programs

_____ Other _____

QUESTIONS ABOUT DEVELOPING COMPUTER PROGRAMS

183. Which of the following activities have you done with a computer? Check all that apply:

☐ I have not done any of these activities

☐ Loaded a program into memory

☐ Saved a program on a disk, tape, or other storage device

☐ Named or renamed a program file

☐ Listed a program

☐ Backed up a copy of a program or file

☐ Deleted a program from disk or tape

☐ Erased computer memory

☐ Accessed a catalog or menu of saved programs

☐ Run a program

☐ Tested and debugged a program

184. In which of the following languages have you written a program? Check all that apply:

☐ I have not written a program

☐ APL

☐ Assembly Language

☐ BASIC

☐ COBOL

☐ FORTRAN

185. What was the length, in lines, of the longest program you have written?

 0, I have not written a program

 1-10 lines or 1 procedure

 11-25 lines or 2-3 procedures

 26-50 lines or 4-10 procedures

 51-100 lines or 11-20 procedures

 101 or more lines or 21 or more procedures

186. What is the longest program--written by someone you have personally modified, edited, or changed in some way that would perform a different task?

 I have never changed a program

 1-20 lines (approximately 1 screen)

 21-40 lines (approximately 2 screens)

 40 or more lines

Have you, yourself, written a computer program with the following elements? Check all that apply:

☐ I have not written a program

☐ Repetition or iteration

☐ Conditional decisions ("if, then")

☐ Use of variables

☐ Logical operations

☐ Arithmetic operations

☐ Sound output

☐ Graphical output

☐ Using arrays

☐ Using data files

☐ Statements for accepting input from keyboard or other peripheral device

☐ Format statements or image strings for output on video display, printer or other peripheral device

188. Which of the following sources of inaccuracy have you experienced? Check all that apply.

_____ The input data was inaccurate ("garbage in, garbage out")

_____ The program "rounded off" inappropriate data

_____ There was a logical error in the program

_____ The input data was called from the wrong field, wrong variable, etc.

_____ The program was inappropriate for the data

_____ Other, please specify _____

_____ None

QUESTIONS ABOUT ANALYZING COMPUTER APPLICATIONS

Many districts use computers for record keeping for students and staff. Please answer the following questions if your district uses computers for this purpose. If not, please apply:

189. Who uses the computer?

_____ Principal

_____ Teachers

_____ Special computer personnel

_____ Guidance counselors

_____ Secretaries, Clerks

_____ Students

_____ Other _____

190. What types of information are main about students?

_____ Classes requested

_____ Classes enrolled

_____ Grades received

_____ Homeroom assignment

_____ Standard test scores

_____ Honors

_____ School enrolled

_____ Personal profile

_____ Attendance

_____ Class schedule

_____ Residence

_____ Age (Birth date)

_____ Telephone number

_____ Other _____

191. What types of information are main about staff?

_____ Salary

_____ Residence

_____ Years of service

_____ Educational attainment

_____ Current grade level of class

_____ Subject areas of current cla

_____ School

_____ Certification status

_____ Other _____

192. What sorts of summary information do you
the student record system in your district?

_____ Course enrollments

_____ Student schedules

_____ School or district standardized test

_____ Bussing schedules and routes

_____ Attendance records

_____ Room/building utilization

_____ Grade point averages

_____ Class ranks

_____ Other _____

193. Which of the following groups utilize computers
your district?

_____ Administrative personnel

_____ Instructional personnel

_____ Students

_____ Parents

QUESTIONS ABOUT UNDERSTANDING SOCIAL ISSUES RELA

The following administrative tasks may be personally, by a member of your staff, or Please indicate, for each task, whether th computer assistance, without computer assi all.

W
Com
Assi

94. Mathematical calculations, such as those used in maintaining a checkbook
95. Writing letters
96. Operating small appliances
97. Scoring student tests
98. Reporting standardized test scores to parents
99. Maintaining mailing lists
200. Retaining student records
201. Scheduling classes
202. Scheduling transportation
203. Performing statistical analyses
204. Constructing individualized instruction plans (IEP's)
205. Keeping student grades
206. Creating student report cards
207. Operating security system
208. Operating air conditioning/heating system
209. Operating lights
210. Writing payroll checks
211. Operating a sprinkler (fire prevention

215. Which of the following data quality assurance activities have you done or directed someone else to do? Check all that apply.

- ☐ Established categories of data to be collected
- ☐ Identified indicators or measures to be collected
- ☐ Obtained data
- ☐ Dealt with missing data
- ☐ Changed data into a machine-readable format
- ☐ Verified machine data against raw data
- ☐ Conducted range check
- ☐ Examined summary statistics, such as means and standard deviations
- ☐ Other _____

In your district, how often have any of the following related problems occurred in the past year?

<u>Problem</u>	<u>Freq</u>	
	<u>Never</u>	<u>1-2 Times</u>
Intentional equipment damage	<input type="radio"/>	<input type="radio"/>
Equipment theft	<input type="radio"/>	<input type="radio"/>
Intentional destruction of data	<input type="radio"/>	<input type="radio"/>
Unauthorized change of data	<input type="radio"/>	<input type="radio"/>
Theft of data	<input type="radio"/>	<input type="radio"/>
Copying copyrighted programs	<input type="radio"/>	<input type="radio"/>
Theft of passwords	<input type="radio"/>	<input type="radio"/>
Intentional disruption of operating system	<input type="radio"/>	<input type="radio"/>
Student cheating on computer projects	<input type="radio"/>	<input type="radio"/>

225. In the past year have you been affected by the problem in your district?

_____ Yes

_____ No

226. If yes, generally how quickly was the problem fixed?

_____ As soon as it was noticed (i.e., immediately)

_____ Within one day

_____ Within one week

_____ In 1-2 weeks

_____ In 3-4 weeks

_____ It has not been fixed

227. If yes, how much did the error cost?

_____ Don't know

_____ Less than \$50

_____ \$51 - \$500

_____ \$501 - \$5,000

_____ \$5,000+

228. In the past year, have you heard any complaints from parents, or employees about loss of confidence in the school due to the introduction of computers?

_____ Yes

_____ No

In the past year, have you heard any student, parent, or teacher tell you that they are using a computer in their classroom?

_____ Yes

_____ No

Have you ever been required to interact with a computer terminal that you would have preferred to interact with a person (e.g., a machine teller instead of a human teller)?

_____ Yes

_____ No

In the past month, how many complaints have you received from parents, students, or district employees regarding invasion of privacy?

_____ None

_____ 1-3

_____ 4-10

_____ 11-20

_____ 21+

232. Which of the following actions have you t
concerned about the possibility of having
invaded by a computer? Check all that ap

_____ Omitting certain information when f
_____ applications

_____ Requesting your name be removed fro

_____ Declining to provide your social se

_____ Complaining to government agencies

_____ Writing to a legislator

_____ Writing to the editor of a newspape

_____ Other _____

_____ I have not taken any such actions

233. Which of the following actions have you taken to protect the privacy of entries on a computer? Check all that apply:

- ☐ Restricted or limited the data that entered into the data base
- ☐ Identified individuals by identification number
- ☐ Stored information necessary to link entries at a separate location
- ☐ Periodically purged data
- ☐ Encoded all data
- ☐ Restricted physical access to terminals
- ☐ Assigned user "log on" ID to restrict access
- ☐ Encrypted data when transferring from one computer to another
- ☐ Restricted physical access to data center
- ☐ I have not taken any such actions

234. Do you (or any member of your family)

_____ Yes

_____ No

235. If yes, about how many minutes per

_____ Minutes

If yes, what proportion of the time
at home is spent in the following ways

Computer Use

Proportion

236. Working alone

0% 2

237. Teaching someone

0% 2

238. Working together
with someone

0% 2

239. If yes, what proportion of the time
at home is spent in recreation use

_____ 0%

_____ 25%

_____ 50%

_____ 75%

_____ 100%

QUESTIONS ABOUT UNDERSTANDING COMPUTER-RELATED

240. Which of the following operating systems used?

 CP/M

 Apple DOS3.3

 TRSDOS

 MS-DOS or PC-DOS

 Unix

 UCSD-p-system

 Zenix

 VMS

 TSO

 Other _____

 Don't know

 I have not used any operating syst

Which of the following data communication equipment have you used?

	<u>Used</u>
241. Modem	<input type="radio"/>
242. Serial (RS232) or Parallel Interface	<input type="radio"/>
243. Port	<input type="radio"/>
244. Protocol Emulator or Converter	<input type="radio"/>

QUESTIONS THAT INVENTORY COMPUTER-RELATED RESOU

245. Approximately what percentage of the microcomputers are reserved strictly for teacher use (for inservice training, etc.)?

_____ 0-25% of the microcomputers

_____ 26-50% of the microcomputers

_____ 51-75% of the microcomputers

_____ 76-100% of the microcomputers

How are computer resources (terminals, microcomputers, etc.) distributed in your district? Check the one that most closely describes your district, for each school level.

Hig
Sch
(24

All schools have approximately the same number of computers that they keep all year.

One school has more computers than the other(s) and keeps them all year.

A number of computers are rotated as a group through the schools for a specific period of time.

The number of computers varies from school to school.

COMPUTER LITERACY

QUESTIONS FOR PRINCIPALS

Does your school have written goals for students?

☐ Yes, in place

☐ Yes, in progress

☐ No

☐ Don't know

If yes, which goals have been established in computer education? Check all that apply.

☐ Computers to be used as a functional word by all students in a wide variety of subjects

☐ Computers to manage the educational process supplying individual prescriptions to each student

☐ Computer science courses to be offered

☐ Data processing courses to be offered

☐ Computers to be used in conjunction with other technologies

☐ None of the above

☐ Don't know

Does your school have written policies concerning computer utilization?

☐ Yes

☐ No

☐ Don't know

4. If yes, which of the following areas do you
Check all that apply:

_____ Integration of computer-related learning
into the existing curricula

_____ Sharing of equipment

_____ Development of computer software

_____ Standardization of hardware and software

_____ Loaning computers to students or staff

_____ Graduation requirements

_____ Recreational use of computers

_____ Not applicable

5. What has been instrumental in developing and
activity in your school? Check all that apply

_____ Business/community initiative or support

_____ University/college assistance

_____ Federal funding

_____ State assistance

_____ Local appropriations

_____ Administrative initiative or support

_____ Teacher initiative or support

_____ Student initiative or support

_____ Local board policy

_____ Parent initiative or support

_____ We have no computer-related activities
school

Yes, as electives

 Yes, as requirements

 Yes, both as electives and requirements

 No

7. Which, if any, of the following courses are required?
Check all that apply:

 Introduction to Computing

 Computer Science

 Computer Programming

 Word Processing

 Data Processing

 None of these courses

8. Have the enrollments for computer-related courses increased since last year?

 Yes, in elective courses

 Yes, in requirement courses

 Yes, in both

 No

 Don't know

9. Does your school have specific timetables for computer-based systems and/or curricula?

 Yes

 No

 Don't know

10. Does your school have a special procedure for computer equipment?

_____ Yes

_____ No

_____ Don't know

11. Does your school have specific policies on parental input to computer-related decisions?

_____ Yes

_____ No

_____ Don't know

12. In what way are parent groups involved with the school? Check all that apply:

_____ Providing organized community support

_____ Funding hardware or software purchases

_____ Serving as teacher aids

_____ Helping with planning for computers

_____ Using school computers at home with children

_____ Writing computer programs

_____ Fund raising for computer-related materials

_____ Providing individual support

_____ Other _____

13. Has some non-school group, such as a community group, sponsored a project that supported the use of computers in the school?

_____ Yes

_____ No

What mechanics have been put in operation for parents knowledgeable about computers and to be informed of what children are doing? Check all that apply:

- ☐ Parent/teacher meetings and demonstrations
- ☐ Parent/student workshops
- ☐ Computer assignments and printouts sent home
- ☐ Assistance in purchasing appropriate hardware/software for home use
- ☐ Student assignments to be done at home
- ☐ Other _____
- ☐ None of the above

For which of the following items are there budget allocations in your school? Check all that apply:

- ☐ Computer hardware (keyboards, monitors, computer disk drives, printers, graphics tablets, etc.)
- ☐ Computer software and courseware (programs, etc.)
- ☐ Teacher training related to hardware and software use

How are computers used to support instruction in your school? Check all that apply:

- ☐ Used for teaching and learning
- ☐ Used for instruction in programming
- ☐ Used as a tool in various subjects and courses
- ☐ Used for computer-managed instruction

		Learn to Use As <u>A Tool</u>	Learn to <u>Program</u>	Use <u>As</u>
17.	Art	<input type="radio"/>	<input type="radio"/>	
18.	Business Education	<input type="radio"/>	<input type="radio"/>	
19.	Introduction to Computing	<input type="radio"/>	<input type="radio"/>	
20.	Computer Programming	<input type="radio"/>	<input type="radio"/>	
21.	Computer Science	<input type="radio"/>	<input type="radio"/>	
22.	Distributive Education	<input type="radio"/>	<input type="radio"/>	
23.	Economics	<input type="radio"/>	<input type="radio"/>	
24.	English	<input type="radio"/>	<input type="radio"/>	
25.	Foreign Language	<input type="radio"/>	<input type="radio"/>	
26.	Health	<input type="radio"/>	<input type="radio"/>	
27.	Home Economics	<input type="radio"/>	<input type="radio"/>	
28.	Independent Study	<input type="radio"/>	<input type="radio"/>	
29.	Mathematics	<input type="radio"/>	<input type="radio"/>	
30.	Music	<input type="radio"/>	<input type="radio"/>	
31.	Physical Education	<input type="radio"/>	<input type="radio"/>	
32.	Programs for Gifted Students	<input type="radio"/>	<input type="radio"/>	
33.	Science	<input type="radio"/>	<input type="radio"/>	
34.	Social Studies	<input type="radio"/>	<input type="radio"/>	
35.	Special Education	<input type="radio"/>	<input type="radio"/>	
36.	Vocational Education	<input type="radio"/>	<input type="radio"/>	
37.	Other, please specify _____			

38. In your school, are there specific rules following? Check all that apply:

☐ Protecting equipment from damage

☐ Protecting equipment from loss

☐ Destroying another person's data

☐ Disrupting the operation of the computer

☐ Scheduling or sharing equipment

☐ Scheduling or sharing programs

☐ Copying copyrighted programs

☐ Copying other students' graded computer work

39. When school is closed either for the summer or for other reasons, what is your policy regarding computers?

☐ Send computers home with students

☐ Allow teachers or administrators to use them

☐ Distribute them to other selected individuals

☐ Lock them up for safekeeping

☐ Leave them in their assigned location

☐ Use them for school or district training or curriculum development

☐ Send them out for maintenance

☐ Use them in summer camp

☐ None of the above

What procedures does your school use for evaluating computer-related learning materials? Check all that

☐ An evaluation committee reviews proposed materials

☐ A computer coordinator or specialist reviews proposed materials

☐ We rely on salespersons' recommendations

☐ We rely on external evaluators, such as consultants or state education departments

☐ A supervisor or administrator reviews proposed materials

☐ A media specialist reviews proposed materials

☐ We rely on teacher recommendations

☐ Other _____

Which of the following are methods or techniques used in your school to assess student's skill and knowledge of computer topics? Check all that apply:

☐ Standardized tests

☐ Teacher-made tests

☐ Questionnaires

☐ Project evaluations

☐ Teachers' observations

☐ Others' observations

☐ Other _____

Has your school investigated how computers might be used for the following administrative purposes?

	<u>Investigated</u>	<u>Implemented</u>
Attendance	<input type="radio"/>	<input type="radio"/>
Student records/ report cards	<input type="radio"/>	<input type="radio"/>
Payroll	<input type="radio"/>	<input type="radio"/>
Accounting	<input type="radio"/>	<input type="radio"/>
Inventory	<input type="radio"/>	<input type="radio"/>
Printing mailing labels	<input type="radio"/>	<input type="radio"/>
Electronic mail to staff	<input type="radio"/>	<input type="radio"/>
Electronic mail to parents	<input type="radio"/>	<input type="radio"/>
Student scheduling	<input type="radio"/>	<input type="radio"/>
Student testing	<input type="radio"/>	<input type="radio"/>
Personnel records	<input type="radio"/>	<input type="radio"/>

Which of the following are you currently using to meet the administrative computing needs of your school? Check all that apply.

☐ Our own school mainframe computer

☐ Our own school microcomputer(s)

☐ A multi-district or regional public computer service

☐ A commercial computer service

☐ Other _____

☐ We do not use computers for administrative purposes

54. Does your school use computers for ca

_____ Yes

_____ No

_____ Don't know

55. Does your school have an assigned com
responsible for computer use in instr

_____ Yes

_____ No

_____ Don't know

56. If yes, who assigned the computer coo

_____ Superintendent/Board of Educatio

_____ Principal

_____ Other Administrator

_____ Teachers

Has your school offered training in introduction
computer programming or computer science to the

_____ Yes

_____ No

_____ Don't know

If yes, who was responsible for arranging for in

_____ Superintendent

_____ Assistant Superintendent/Curriculum Supervi

_____ Principal

_____ Teachers

_____ Other _____

If yes, what staff was eligible for training?

_____ Teachers

_____ Support staff

_____ Administration

Does your school provide release time or financi
teachers who develop computer-based instructiona

_____ Yes

_____ No

_____ Don't know

61. How do you disseminate information c
in your school? Check all that appl

_____ Newsletters

_____ Computer fairs

_____ Computer open house

_____ Press releases

_____ Letters to parents or staff

_____ Faculty meetings

_____ Visits to other institutions

_____ Demonstrations of new equipment

_____ Conferences or meetings

_____ Workshops

_____ None of the above

62. Is your school involved in a networ
that does the following? Check all

_____ Shares hardware resources

_____ Shares software resources

_____ Shares data

_____ Shares personnel

_____ Shares ideas

_____ Not involved

How influential are the following persons or groups in deciding what computer-related courses are to be offered to students?

	<u>Very Influential</u>	<u>Infl</u>
The Superintendent/School Board	o	
School principals	o	
Computer coordinator/specialist	o	
Teachers	o	
Parents	o	
Supervisors	o	
Local businesses	o	
Students	o	
Other _____	o	

In your district, who is responsible for each of the

	Superintendent	Assistant Superintendent	Principal	Assistant Principal	Computer Specialist
Deciding what computer-related skills and knowledge are to be learned by students	o	o	o	o	o
Determining computer-related course offerings	o	o	o	o	o
Establishing budgets for computer-related projects	o	o	o	o	o
Planning staff training	o	o	o	o	o
Implementing staff training programs	o	o	o	o	o
Evaluating and selecting computer hardware	o	o	o	o	o
Evaluating and selecting computer software	o	o	o	o	o
Determining procurement process	o	o	o	o	o
Assigning computer use	o	o	o	o	o
Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o	o	o	o
Evaluating student benefits from computer-related programs	o	o	o	o	o

IONS ABOUT TEACHING WITH OR ABOUT COMPUTERS

Listed below are some ways teachers use or teach. Please check those activities that currently take place in your school and those activities that are being planned.

<u>Use</u>	<u>Computer Activity</u>	<u>Current Use</u>
For numerical calculations		<input type="radio"/>
To run simulations		<input type="radio"/>
For instructional games		<input type="radio"/>
As leisure time activity and reward		<input type="radio"/>
For student problem solving		<input type="radio"/>
For drill-and-practice		<input type="radio"/>
As a tutor (teach content)		<input type="radio"/>
To demonstrate concepts		<input type="radio"/>
To score tests		<input type="radio"/>
As an instructional management aid		<input type="radio"/>
As a material generator (tests or worksheets)		<input type="radio"/>
For information retrieval		<input type="radio"/>
For student analysis of data		<input type="radio"/>
For word processing		<input type="radio"/>
For special needs students		<input type="radio"/>
To control laboratory equipment		<input type="radio"/>
<u>Teach</u>		
To teach programming		<input type="radio"/>
To teach computer operation		<input type="radio"/>
To teach data processing		<input type="radio"/>
To teach hardware & software procedures		<input type="radio"/>
To teach history of computers		<input type="radio"/>
To teach how computers are applied		<input type="radio"/>
To teach about computer careers		<input type="radio"/>
To teach about the role and impact of computers in society		<input type="radio"/>

In what subject areas does your school in-
based on computerized testing and computer

For individ-
educational
plans (1

110.	Art/Graphic Arts	o
111.	Business Education	o
112.	Computer Education (fundamentals of computing)	o
113.	Computer Programming (in-depth study of a programming language)	o
114.	English/Language Arts	o
115.	Foreign Languages	o
116.	Health	o
117.	Home Economics	o
118.	Industrial Arts	o
119.	Mathematics	o
120.	Music	o
121.	Performing Arts	o
122.	Physical Education	o
123.	Science	o
124.	Social Studies/Social Science	o

your experience with using computers in teaching.
 Which of the following have you found to be a disadvantage?

	<u>A Dis-</u> <u>advantage</u>	<u>Not</u> <u>advan</u>
of access to terminals or microcomputers	o	
of student interest	o	
quality of educational software	o	
allocation of funds to computers over more pressing needs	o	
difficulty with integrating computer- based skills with the remainder of the curriculum	o	
difficulty with managing student use of computers	o	
lack of teacher or staff training	o	
lack of teacher or staff interest	o	
lack of administrative support	o	

From your experience with using computers in teaching,
 which of the following have you found to be an advantage?

	<u>An</u> <u>Advantage</u>	<u>Not</u> <u>Adva</u>
providing immediate feedback	o	
requiring great patience	o	
keeping the learner actively involved	o	
providing self-paced instruction	o	
keeping records of student performance	o	
providing, through simulations, experiences otherwise not possible in the classroom	o	

140. Have you personally written or designed a course that teaches or provides instruction in a particular area?

_____ No

_____ Yes, 1 program

_____ Yes, 2-5 programs

_____ Yes, 6 or more programs

141. Which of the following sources of information do you use at least once a month? Check all that apply.

_____ Newspaper articles

_____ Weekly computer periodicals (such as Byte)

_____ General computer periodicals (such as Computing, Byte magazine, Consumer Reports)

_____ Educational computing periodicals (such as Electronic Learning, Classroom Computer Learning, Computing Teacher, THE Journal)

_____ Professional periodicals (such as Mathematics, AEDS Monitor)

_____ Software catalogs

_____ Regional teacher training centers

_____ Colleagues and friends

_____ Formal classes or workshops, including

_____ "User" or other professional groups

_____ Electronic data services (such as The Compuserve, EDUNET)

_____ Magazines delivered on electronic media

_____ Television/radio

_____ Other _____

What has been the primary source of computer-
material for your school? Check one:

- ☐ Computer manufacturers or distributors
- ☐ Published texts
- ☐ Materials developed by other school systems
- ☐ Material developed within our school or district
- ☐ Public domain materials
- ☐ Professional literature

Which individuals in your school teach others
computers? Check all that apply:

- ☐ Administrators
- ☐ Teachers
- ☐ Paid teacher aides or paraprofessionals
- ☐ Computer specialists
- ☐ Library media specialists
- ☐ Volunteers
- ☐ Other school staff
- ☐ Students
- ☐ Other _____

QUESTIONS ABOUT USING COMPUTER PROGRAMS

144. What types of computer-related courses or programs have you taken since September 1981? Check all that apply.

_____ Learning a programming language (such as C, Pascal, Logo, or BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research applications

_____ Learning data processing

_____ Learning business applications

_____ A general introduction to computing

_____ Learning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

Which of the following computer resources are available at your school?

	<u>Available</u>	<u>Not Available</u>
Card punch	o	o
Card reader	o	o
Color monitor	o	o
CRT or other video monitor	o	o
Floppy disk drive	o	o
Graphics plotter	o	o
Graphics tablet	o	o
Hard disk drive	o	o
Joystick or game paddle	o	o
Light pen	o	o
Magazines	o	o
Magnetic tape drive, including cassette	o	o
Mainframe computer	o	o
Microcomputer	o	o
"Mouse"	o	o
Music board	o	o
Optical scanner	o	o
Paper tape punch	o	o
Paper tape reader	o	o
Parallel or serial interface	o	o
Persons to assist	o	o
Printer	o	o
Reference books and manuals	o	o
Telephone modem	o	o
Textbooks	o	o
Voice synthesizer	o	o
Other _____		

Which of the following computer devices have been operated?

	<u>Used</u>
172. Card punch	<input type="radio"/>
173. Card reader	<input type="radio"/>
174. Color monitor	<input type="radio"/>
175. CRT or other video monitor	<input type="radio"/>
176. Floppy disk drive	<input type="radio"/>
177. Graphics plotter	<input type="radio"/>
178. Graphics tablet	<input type="radio"/>
179. Hard disk drive	<input type="radio"/>
180. Joystick or game paddle	<input type="radio"/>
181. Light pen	<input type="radio"/>
182. Magnetic tape drive, including cassette	<input type="radio"/>
183. Mainframe computer	<input type="radio"/>
184. Microcomputer	<input type="radio"/>
185. "Mouse"	<input type="radio"/>
186. Music board	<input type="radio"/>
187. Optical scanner	<input type="radio"/>
188. Paper tape punch	<input type="radio"/>
189. Paper tape reader	<input type="radio"/>
190. Parallel or serial interface	<input type="radio"/>
191. Printer	<input type="radio"/>
192. Telephone modem	<input type="radio"/>
193. Voice synthesizer	<input type="radio"/>
194. Other _____	
195. _____ I have not used any of these devices	

Are microcomputers being used with videocassette
videodisc players in your school?

 Yes, with videocassette recorders

 Yes, with videodisc players

 Yes, with both

 No

How often do you personally use the following
need information regarding how to use a computer?

	<u>Often</u>	<u>Som</u>
Manuals supplied by the hard- ware company or publishers	o	
Technical assistance from the vendor	o	
School or district-level technical assistance	o	
"Users" group	o	
Tutorial programs	o	
Friends/colleagues/family	o	
Reference books	o	
Independent technical assistance	o	
Professional periodicals	o	
Commercial periodicals	o	
Local professional organizations	o	

When initially considering "packaged" computer programs, which of the following are most important?

- | | <u>Very
Important</u> |
|--|---------------------------|
| 208. The reputation of the program | o |
| 209. The purpose of the program | o |
| 210. The data needed to use the program | o |
| 211. The equipment needed to run the program | o |
| 212. The "user-friendliness" or ease of use of the materials | o |
| 213. The author or source of the program | o |
| 214. Length or complexity of the documentation | o |
| 215. Completeness | o |
| 216. Other, please specify _____ | |
| 217. _____ I do not evaluate computer programs | |

Given the computer hardware in your school, which kinds of programs are available for you personally? List all that apply:

- ☐ Simulations
- ☐ Business programs (e.g., spreadsheets)
- ☐ Math or statistics computation
- ☐ Text editing or word processing
- ☐ Tutorial programs
- ☐ Drill-and-practice programs
- ☐ Data base or file management programs
- ☐ Graphics programs
- ☐ Authoring language programs
- ☐ Telecommunication programs
- ☐ Compilers
- ☐ Recreational programs
- ☐ System utilities

Do you have a single-user microcomputer or a computer in your office?

☐ Yes

☐ No

Does your secretary have a single-user microcomputer terminal to use at work?

☐ Yes

☐ No

221. Where do you have access to a computer outside
all that apply:

_____ I do not have access to a computer outside
_____ school

_____ At home

_____ At a friend's home

_____ At someone's place of work

_____ At a college or university

_____ At a library

_____ Other, please specify _____

Where have you used the following kinds of
packages?

	<u>School</u>
222. Accounting	<input type="radio"/>
223. Authoring	<input type="radio"/>
224. Business	<input type="radio"/>
225. Communications	<input type="radio"/>
226. Computational	<input type="radio"/>
227. Data base management	<input type="radio"/>
228. Educational	<input type="radio"/>
229. Graphics	<input type="radio"/>
230. Home management	<input type="radio"/>
231. Integrated packages	<input type="radio"/>
232. Recreation	<input type="radio"/>
233. Simulations	<input type="radio"/>
234. Spreadsheets	<input type="radio"/>
235. Statistical analysis	<input type="radio"/>
236. Telecommunications	<input type="radio"/>
237. Utility	<input type="radio"/>
238. Word processing	<input type="radio"/>

Which of the following sets of keys on a keyboard operate by "touch" typing? Check all that apply

☐ Alphabetic

☐ Numeric

☐ Function (for example, "enter" or "return")

☐ None

How often do you personally use a word processing computer dedicated to word processing?

☐ Never

☐ Rarely

☐ Monthly

☐ Weekly

☐ Daily

How long have you personally been using a word or a dedicated word processor (not necessarily computer)?

☐ I have not used a word processing program

☐ Less than one month

☐ Two to four months

☐ Five months to a year

☐ 13-24 months

☐ More than 2 years

. Computers are frequently used to access data
following types of data bases have you person
all that apply:

_____ I have not accessed any data bases

_____ Career information

_____ Bibliographical citations (library)

_____ Stock market

_____ School or district data (personnel, bud
inventory, etc.)

_____ Student records

_____ National press wire services

_____ Electronic bulletin board

_____ Computer courseware or other educational
resources

_____ Recreational programs

_____ Other _____

249. Which of the following activities have you, with a computer? Check all that apply:

 I have not done any of these activities

 Loaded a program into memory

 Saved a program on a disk, tape, or card

 Named or renamed a program file

 Listed a program

 Backed up a copy of a program or file

 Deleted a program from disk or tape

 Erased computer memory

 Accessed a catalog or menu of saved programs

 Run a program

 Tested and debugged a program

250. In which of the following languages have you written a program? Check all that apply:

 I have not written a program

 APL

 Assembly Language

 BASIC

 COBOL

 FORTRAN

 Logo

 Pascal

 Pilot

 RPG

 Other

What was the length, in lines, of the longest program you have written?

_____ 0, I have not written a program

_____ 1-10 lines or 1 procedure

_____ 11-25 lines or 2-3 procedures

_____ 26-50 lines or 4-10 procedures

_____ 51-100 lines or 11-20 procedures

_____ 101 or more lines or 21 or more procedures

What is the longest program--written by someone else and personally modified, edited, or changed in some way to make it perform a different task?

_____ I have never changed a program

_____ 1-20 lines (approximately 1 screen)

_____ 21-40 lines (approximately 2 screens)

_____ 40 or more lines

Have you, yourself, written a computer program
the following elements? Check all that apply:

_____ I have not written a program

_____ Repetition or iteration

_____ Conditional decisions ("if, then")

_____ Use of variables

_____ Logical operations

_____ Arithmetic operations

_____ Sound output

_____ Graphical output

_____ Using arrays

_____ Using data files

_____ Statements for accepting input from keyboard
other peripheral device

_____ Format statements or image strings for output
information on video display, printer or
peripheral device

4. Which of the following sources of inaccuracies
have you experienced? Check all that apply:

_____ The input data was inaccurate ("Garbage
garbage out")

_____ The program "rounded off" inappropriately

_____ There was a logical error in the program

_____ The input data was called from the wrong
location (wrong field, wrong variable, etc.)

_____ The program was inappropriate for the problem

_____ Other, please specify _____

_____ None

ANS ABOUT ANALYZING COMPUTER APPLICATIONS

any schools use computers for recording and access
students and staff. Please answer the following
your school uses computers for this purpose. Check
apply:

no uses the computer?

_____Principal

_____Teachers

_____Special computer personnel

_____Guidance counselors

_____Secretaries, Clerks

_____Students

_____Other _____

Types of information are maintained about students?

_____ Classes requested
_____ Classes enrolled
_____ Grades received
_____ Homeroom assignment
_____ Standard test scores
_____ Honors
_____ School enrolled
_____ Personal profile
_____ Attendance
_____ Class schedule
_____ Residence
_____ Age (Birth date)
_____ Telephone number
_____ Other _____

257. What types of information are maintained about staff?

_____ Salary
_____ Residence
_____ Years of service
_____ Educational attainment
_____ Current grade level of classes
_____ Subject areas of current class
_____ School
_____ Certification status
_____ Other _____

at sorts of summary information do you retrieve
e student record system at your school?

 Course enrollments

 Student schedules

 School or district standardized test score
summaries

 Bussing schedules and routes

 Attendance records

 Room/building utilization

 Grade point averages

 Class ranks

 Other _____

ich of the following groups utilize computer gen
ur school?

 Administrative personnel

 Instructional personnel

 Students

 Parents

factors that might argue against co
following have you considered? Che

_____ Equipment acquisition costs

_____ Equipment-related costs

_____ Equipment availability (access)

_____ Hardware maintenance

_____ Software maintenance

_____ Software acquisition costs

_____ Software-related costs

_____ Software availability/accessibility

_____ Equipment capacity (memory)

_____ Equipment capacity (CPU)

_____ Textbook availability

_____ Data gathering costs

_____ Data storage costs

_____ Data entry costs

_____ Programming costs

_____ Output capabilities

_____ Other _____

The following administrative tasks may be personally, by a member of your staff, or by Please indicate, for each task, whether the computer assistance, without computer assistance.

With
Computer
Assistance

261. Mathematical calculations, such as those used in maintaining a checkbook
262. Writing letters
263. Operating small appliances
264. Scoring student tests
265. Reporting standardized test scores to parents
266. Maintaining mailing lists
267. Retaining student records
268. Scheduling classes
269. Scheduling transportation
270. Performing statistical analyses
271. Constructing individualized instruction plans (IEP's)
272. Keeping student grades
273. Creating student report cards
274. Operating security system
275. Operating air conditioning/heating system
276. Operating lights
277. Writing payroll checks
278. Operating a sprinkler (fire prevention or landscape watering) system
279. Operating a telephone answering system
280. Labor relations and negotiations

done or directed someone else to do? Che

_____ Established categories of data to b

_____ Identified indicators or measures f
_____ categories

_____ Obtained data

_____ Dealt with missing data

_____ Changed data into a machine-readabl

_____ Verified machine data against raw d

_____ Conducted range check

_____ Examined summary statistics, such a
_____ means and standard deviations

_____ Other _____

your school, how often have any of the following problems occurred in the past year?

<u>Problem</u>	<u>Frequency</u>		
	<u>Never</u>	<u>1-2 Times</u>	<u>3-5</u>
Conventional equipment damage	o	o	
Equipment theft	o	o	
Conventional destruction of data	o	o	
Unauthorized change of data	o	o	
Loss of data	o	o	
Copying copyrighted programs	o	o	
Loss of passwords	o	o	
Conventional disruption of operating system	o	o	
Student cheating on computer projects	o	o	

292. In the past year, have you been a
error" in your school?

_____ Yes

_____ No

293. If yes, generally how quickly was

_____ As soon as it was noticed

_____ Within one day

_____ Within one week

_____ In 1-2 weeks

_____ In 3-4 weeks

_____ It has not been fixed

294. If yes, how much did the error co

_____ Don't know

_____ Less than \$50

_____ \$51-\$500

_____ \$501-\$5,000

_____ \$5,000+

295. In the past year, have you heard
parents, or employees about loss
to the introduction of computers?

_____ Yes

_____ No

296. In the past year, have you heard
tell you that they are using a co

_____ Yes

ve you ever been required to interact with a computer?
ould have preferred to interact with a person (for example, a
achine teller instead of a human teller)?

____ Yes

____ No

the past month, how many complaints have you heard from
students or school employees regarding computer-related
privacy?

____ None

____ 1-3

____ 4-10

____ 11-20

____ 21+

Which of the following actions have you taken because you
are concerned about the possibility of having your personal
information invaded by a computer? Check all that apply:

____ Omitting certain information when filling out forms or applications

____ Requesting your name be removed from a list

____ Declining to provide your social security number

____ Complaining to government agencies

____ Writing to a legislator

____ Writing to the editor of a newspaper or magazine

____ Other _____

____ I have not taken any such actions

300. Which of the following actions have
protect the privacy of entries on
all that apply:

_____ Restricted or limited the data
_____ or entered into the data base

_____ Identified individuals by ID
_____ instead of names

_____ Stored information necessary
_____ ID numbers in a separate location

_____ Periodically purged data

_____ Encoded all data

_____ Restricted physical access to

_____ Assigned user "log on" ID to
_____ data

_____ Encrypted data when transferred
_____ tion to another

_____ Restricted physical access to
_____ or disks

_____ I have not taken any such action

Do you (or any member of your family) have a computer?

 Yes

 No

If yes, about how many minutes per week do you use the computer?

 Minutes

If yes, what proportion of the time that you spend at home is spent in the following ways?

<u>Computer Use</u>	<u>Proportion of Time</u>				
Working alone	0%	25%	50%	75%	100%
Teaching someone	0%	25%	50%	75%	100%
Working together with someone	0%	25%	50%	75%	100%

If yes, what proportion of the time that you spend at home is spent in recreational use (either alone or with someone)?

 0%

 25%

 50%

 75%

 100%

QUESTIONS ABOUT UNDERSTANDING COMPUTERS

307. Which of the following operating systems have you used?

_____ CP/M

_____ Apple DOS3.3

_____ TRSDOS

_____ MS-DOS or PC-DOS

_____ Unix

_____ UCSD-p-system

_____ Zenix

_____ VMS

_____ TSO

_____ Other _____

_____ Don't know

_____ I have not used any operating system

Which of the following data communication equipment have you used?

308. Modem

309. Serial (RS232) or Parallel Interface

310. Port

311. Protocol Emulator or Converter

THAT INVENTORY COMPUTER-RELATED RESOURCES

many computer terminals and microcomputers are made available for instructional use in your school building. Include computers personally owned by students:

 Number of single-user microcomputers

 Number of terminals

 Total

Approximately what percentage of the microcomputers are reserved strictly for teacher use (for classroom management, service training, etc.)?

 0-25% of the microcomputers

 26-50% of the microcomputers

 51-75% of the microcomputers

 76-100% of the microcomputers

Microcomputers are often described in terms of their memory capacity, such as "2K" or "16K." What are the numbers of microcomputers of different capacities available in your school building?

Type of Microcomputer

Microcomputers with less than 16K internal memory

Microcomputers with 16K-64K internal memory

Microcomputers with more than 64K internal memory

Microcomputers for which you do not know internal memory

Of all of the above microcomputers, how many have a disk drive?

321. What is the ratio of students to computer classes at your school?

	<u>Students</u>		<u>Com</u>
_____	1	to	
_____	2	to	
_____	3	to	
_____	4-6	to	
_____	7-10	to	
_____	11-20	to	
_____	21-30	to	
_____	Other _____		

322. What ratio of students to computer/terminal would you see meeting student needs in

	<u>Students</u>		<u>Comp</u>
_____	1	to	
_____	2	to	
_____	3	to	
_____	4-6	to	
_____	7-10	to	
_____	11-20	to	
_____	21-30	to	
_____	Other _____		
_____	Stay the same		

323. If you have computers in your school, you using?

_____ Number of models

your school had 32 microcomputers, how would you use them?

_____ One microcomputer per classroom for 32 classrooms

_____ Two microcomputers per classroom for 16 classrooms

_____ Four microcomputers in each of 8 classrooms or other locations

_____ Sixteen microcomputers per classroom for 2 classrooms

_____ All microcomputers placed in one location

_____ Other _____

approximately how many instructional software packages (text tutorials, drill-and-practice, etc.) are there available for students and teachers to use on microcomputers in your school?

_____ None

_____ 1-10 diskettes full

_____ 11-20 diskettes full

_____ 21-50 diskettes full

_____ 51 or more diskettes full

_____ Don't know

do you have a catalog of the computer software that is available in your school?

_____ Yes

_____ No

_____ Don't know

What is the location of the computer t
that are being used by students in you
please indicate approximate quantity a
of minutes the microcomputers and term
for student use outside of scheduled c

	<u>Location</u>	<u>Approximate of Microcomputers and Terminals</u>
327.	Classrooms	_____
328.	Library/Media Center	_____
329.	Computer Laboratory/ Center	_____
330.	Department Office	_____
331.	Portable computers within school used in different locations	_____
332.	Other, please specify _____	

Approximately how much time (in minutes
day using computers for instructional
hours? Include before and after school
available, but do not include guidance

333. Students in computer courses:
_____ Average number of minutes
334. Students not in computer courses:
_____ Average number of minutes
335. Students in special education classes:
_____ Average number of minutes
336. Students in gifted and talented classes:
_____ Average number of minutes

Approximately what percentage of students in your school use computers at least once a week? Check one:

- ☐ 0%
- ☐ 1-10%
- ☐ 11-20%
- ☐ 21-30%
- ☐ 31-40%
- ☐ 41-50%
- ☐ 51-60%
- ☐ 61-70%
- ☐ 71-80%
- ☐ 81-90%
- ☐ 91-100%

Approximately what percentage of students graduating from your school this year, who have completed a credit-granting course for which a computer (for programming, word processing, simulation, etc.) was a requirement? Do not include uses such as drill-and-practice or computer-guided instruction.

- ☐ 0%
- ☐ 1-10%
- ☐ 11-20%
- ☐ 21-30%
- ☐ 31-40%
- ☐ 41-50%
- ☐ 51-60%
- ☐ 61-70%
- ☐ 71-80%
- ☐ 81-90%
- ☐ 91-100%

Of students graduating from your school, what percentage will have received at least one semester of instruction in the following languages? Please indicate the language:

Language

- 339. BASIC
- 340. FORTRAN
- 341. Pascal
- 342. COBOL
- 343. RPG
- 344. Logo
- 345. Pilot
- 346. APL
- 347. Other, please specify _____

During the regular school year, approximately how many students participate regularly in a supervised program that requires students to come to the computer center as an extension of the classroom?

- 348. Number of boys
- 349. Number of girls
- 350. Total number of students

At what grade level do students in your school receive formal instruction in computer usage? Check one:

 K

 1

 2

 3

 4

 5

 6

 7

 8

 9

 10

 11

 12

Are the computer facilities in your school used by groups, such as an adult education or continuing education group, to teach participants to use or program computer?

 Yes, our facilities are used in this way

 No, our facilities are not used in this way

 We have no computer facilities

How many different staff members at your school have received training in the use of computers in courses in which computers are used or in which the computer is the subject of instruction?

353. _____ Number using computer for teaching and learning (drill-and-practice, tutorial)
354. _____ Number using computer as subject of instruction (introduction to computing, programming, computer science)
355. _____ Number using computer as student tool (word processing, data analysis, laboratory experiments)
356. _____ Number using computer as teacher's aid (record keeping)

Since September 1981, what percentage of the staff at your school have received training in the use of computers? Check one in each column:

	Less than 10 hours (357)	10-15 hours (358)	15-20 hours (359)
_____ 0%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 1-10%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 11-20%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 21-30%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 31-40%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 41-50%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 51-60%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 61-70%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 71-80%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 81-90%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ 91-100%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following instructional applications covered by inservice programs offered to staff in Check all that apply:

Use of computers in teaching and learning (d and-practice, tutorial, simulations and mode

Computer as the subject of instruction (introduction to computing, computer programming, computer science, data processing)

Computer as a student tool (mathematical calculation; data analysis; information gathering, storage and retrieval; guidance applications word processing)

Computer as teacher's aide (developing instructional materials, record keeping)

Other, please specify

None

What percentage of the teachers in your school w "highly qualified" to teach about computing (inc and introduction to computing)?

0%

51-60%

1-10%

61-70%

11-20%

71-80%

21-30%

81-90%

31-40%

91-100%

41-50%

How many teachers in your school would
to teach computer programming in each

363. BASIC _____
364. FORTRAN _____
365. Pascal _____
366. COBOL _____
367. RPG _____
368. Logo _____
369. Pilot _____
370. APL _____
371. Other, please specify _____
372. _____ How many different individuals do
373. How many teachers in your school have
level major or minor or a master's deg
_____ Number of teachers
374. How many teachers in your school have
minor, or a master's degree in compute
_____ Number of teachers

What grade does your school serve?

_____ K

_____ 1

_____ 2

_____ 3

_____ 4

_____ 5

_____ 6

_____ 7

_____ 8

_____ 9

_____ 10

_____ 11

_____ 12

How many students are enrolled in your school?

_____ Number of students

How large is the teaching staff in your school?

_____ Number of full-time teachers

_____ Number of part-time teachers

COMPUTER LITERACY

QUESTIONS FOR TEACHERS

1. Does your school have written goals for student learning?

☐ Yes, in place

☐ Yes, in progress

☐ No

☐ Don't know

2. Which, if any, of the following courses do you offer that apply:

☐ Introduction to computing

☐ Computer science

☐ Computer programming

☐ Word processing

☐ Data processing

☐ None of these courses

3. How are computers used to support instruction? Check all that apply:

☐ Used for teaching and learning

☐ Used for instruction in programming

☐ Used as a tool in various subjects and disciplines

☐ Used for computer-managed instruction

4. In your school are there specific rules the following? Check all that apply:

☐ Protecting equipment from damage

☐ Protecting equipment from loss

☐ Destroying another person's data

☐ Disrupting the operation of the computer

☐ Scheduling or sharing equipment

☐ Scheduling or sharing programs

☐ Copying copyrighted programs

☐ Copying other student's graded computer work

5. Which of the following are methods or techniques used in your school to assess student's skill and knowledge in the following topics? Check all that apply:

☐ Standardized tests

☐ Teacher-made tests

☐ Questionnaires

☐ Project evaluations

☐ Teachers' observations

☐ Others' observations

☐ Other _____

How influential are the following persons or groups in deciding what computer-related courses are to be offered?

	<u>Very</u> <u>Influential</u>	<u>In</u>
The Superintendent/School Board	o	
School principals	o	
Computer coordinator/specialist	o	
Teachers	o	
Parents	o	
Supervisors	o	
Local businesses	o	
Students	o	
Other _____	o	

In your district, who is responsible for each of

	Superintendent	Assistant Superintendent	Principal	Assistant Principal	Computer
Deciding what computer-related skills and knowledge are to be learned by students	o	o	o	o	o
Determining computer-related course offerings	o	o	o	o	o
Establishing budgets for computer-related projects	o	o	o	o	o
Planning staff training	o	o	o	o	o
Implementing staff training programs	o	o	o	o	o
Evaluating and selecting computer hardware	o	o	o	o	o
Evaluating and selecting computer software	o	o	o	o	o
Determining procurement process	o	o	o	o	o
Assigning computer use	o	o	o	o	o
Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o	o	o	o
Evaluating student benefits from computer-related programs	o	o	o	o	o
Communicating with parents and school board re course					

QUESTIONS ABOUT TEACHING WITH OR ABOUT COMPUTERS

- . Do you teach basic concepts about computers such as the relationship between memory, central processing, and input and output?

_____ Yes

_____ No

- . Do you teach how to develop computer-oriented procedures?

_____ Yes

_____ No

- . Which of the following subject areas do you apply:

_____ Art/Graphic Arts

_____ Industrial Arts

_____ Business Education

_____ Introduction to Computers

_____ Computer Programming

_____ Mathematics

_____ Computer Science

_____ Music

_____ English/Language Arts

_____ Performing Arts

_____ Foreign Languages

_____ Physics

_____ Health

_____ Science

_____ Home Economics

_____ Social Studies

30. In which of the following subject areas
how computers can be used to solve problems?

_____ Art/Graphic Arts	_____ I
_____ Business Education	_____ I
_____ Computer Programming	_____ M
_____ Computer Science	_____ M
_____ English/Language Arts	_____ P
_____ Foreign Languages	_____ P
_____ Health	_____ S
_____ Home Economics	_____ S

31. Do you teach about the social implications of
job displacement or new job opportunities,
communications, dependency or increased competition?

_____ Yes

_____ No

32. Do you teach about ethical issues related to
privacy of data, copyright infractions, etc.?

_____ Yes

_____ No

33. Do you teach about the general capabilities of
computer use?

_____ Yes

_____ No

Do you teach about the capabilities and limitations of computer applications you use in class?

☐ Yes

☐ No

☐ I don't use computer applications in class

In which of the following computer languages do you teach programming skills? Check all that apply:

☐ I don't teach programming skills

☐ APL

☐ Assembly Language

☐ BASIC

☐ COBOL

☐ FORTRAN

☐ Logo

☐ Pascal

☐ Pilot

☐ RPG

☐ Other

How often do you use a computer as an aid when teaching or demonstrating concepts?

☐ Never

☐ Rarely

☐ Monthly

☐ Weekly

☐ Daily

37. For which of the following classroom rec
you use a computer as an aid? Check all

_____ Attendance

_____ Grades

_____ Schedules

_____ Monitoring instructional progress

_____ Individual Educational Plans (IEP'

_____ Standardized test scores

_____ Other _____

Listed below are some ways teachers use computers.
Please check those activities that currently are in use in your school and those activities that are being planned.

<u>Use</u>	<u>Computer Activity</u>
------------	--------------------------

- | | |
|-----|---|
| 38. | For numerical calculations |
| 39. | To run simulations |
| 40. | For instructional games |
| 41. | As leisure time activity and reward |
| 42. | For student problem solving |
| 43. | For drill-and-practice |
| 44. | As a tutor (teach content) |
| 45. | To demonstrate concepts |
| 46. | To score tests |
| 47. | As an instructional management aid |
| 48. | As a material generator (tests or worksheets) |
| 49. | For information retrieval |
| 50. | For student analysis of data |
| 51. | For word processing |
| 52. | For special needs students |
| 53. | To control laboratory equipment |

<u>Teach</u>

- | | |
|-----|--|
| 54. | To teach programming |
| 55. | To teach computer operation |
| 56. | To teach data processing |
| 57. | To teach hardware & software procedures |
| 58. | To teach history of computers |
| 59. | To teach how computers are applied |
| 60. | To teach about computer careers |
| 61. | To teach about the role and impact of computers in society |
| 62. | To teach problem solving |

From your experience with using computers
which of the following have you found to be

A

- 64. Lack of access to terminals or microcomputers
- 65. Lack of student interest
- 66. Low quality of educational software
- 67. Reallocation of funds to computers from more pressing needs
- 68. Difficulty with integrating computer-taught skills with the remainder of the curriculum
- 69. Difficulty with managing student use of computers
- 70. Lack of teacher or staff training
- 71. Lack of teacher or staff interest
- 72. Lack of administrative support

From your experience with using computers
which of the following have you found to be

A

- 73. Providing immediate feedback
- 74. Having great patience
- 75. Keeping the learner actively involved
- 76. Providing self-paced instruction
- 77. Keeping records of student performance
- 78. Providing, through simulations, experiences otherwise not possible in the classroom

ch of the following sources of information about
use at least once a month? Check all that apply

☐ Newspaper articles

☐ Weekly computer periodicals (such as Infoworld)

☐ General computer periodicals (such as Popular
magazine, Consumer Report)

☐ Educational computing periodicals (such as Ele
Classroom Computer Learning, The Computing Tea)

☐ Professional periodicals (such as Math Teacher)

☐ Software catalogs

☐ Regional teacher training centers

☐ Colleagues and friends

☐ Formal classes or workshops, including inservi

☐ "User" or other professional groups

☐ Electronic data services (such as The Source,
EDUNET)

☐ Magazines delivered on electronic media

☐ Television/radio

☐ Other _____

80. Do you belong to a computer teacher resources?

_____ Yes

_____ No

81. If yes which type of organization do apply:

_____ National organization of teachers
_____ computers

_____ State organization of teachers
_____ computers

_____ Local organization of teachers
_____ computers

_____ Local informal network or user

_____ Computer special interest group

_____ Education special interest group

_____ Other _____

82. In which subject areas have you looked for adequate software? Check all that apply

_____ Art/Graphic Arts _____

_____ Business Education _____

_____ Computer Programming _____

_____ Computer Science _____

_____ English/Language Arts _____

_____ Foreign Languages _____

_____ Health _____

_____ Home Economics _____

QUESTIONS ABOUT USING COMPUTER PROGRAMS

84. What types of computer-related courses since September 1981? Check all that apply

_____ Learning a programming language (BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research applications

_____ Learning data processing

_____ Learning business applications

_____ A general introduction to computers

_____ Learning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

Where have you received any computer training?
apply:

☐ University

☐ College

☐ Vocational-Technical School

☐ Community College

☐ Community Education Program

☐ District Inservice Program

☐ Educational Computer Consortium

☐ Regional support or training center

☐ Computer store

☐ Computer camp

☐ Industry

☐ My training has been self-taught

☐ I have not received any computer training

☐ Other _____

Are you getting the training you need for your u
teaching?

☐ Yes

☐ No

87. If No, which three of the following do you most want to take to help you use computers? Check three only from the following list of

Introduction to Computers in Education

- _____ Computer-managed
_____ Instruction
- _____ Software evaluation

Computer Science

- _____ Advanced programming
- _____ Artificial intelligence
- _____ Data structures and
_____ algorithms
- _____ File processing
- _____ Information retrieval

Computer Applications in Subject Areas

- _____ Art/Graphic Arts
- _____ Business Education
- _____ English/Language Arts
- _____ Foreign Languages
- _____ Health
- _____ Home Economics
- _____ Industrial Arts

Computer Software Packages

- _____ Accounting
- _____ Communications
- _____ Data bases
- _____ Gradebooks
- _____ Graphics

Which of the following computer resources are available at your school?

	<u>Available</u>
1. Card punch	o
2. Card reader	o
3. Color monitor	o
4. CRT or other video monitor	o
5. Floppy disk drive	o
6. Graphics plotter	o
7. Graphics tablet	o
8. Hard disk drive	o
9. Joystick or game paddle	o
10. Light pen	o
11. Magazines	o
12. Magnetic tape drive, including cassette	o
13. Mainframe computer	o
14. Microcomputer	o
15. "Mouse"	o
16. Music board	o
17. Optical scanner	o
18. Paper tape punch	o
19. Paper tape reader	o
20. Parallel or serial interface	o
21. Persons to assist	o
22. Printer	o
23. Reference books and manuals	o
24. Telephone modem	o
25. Textbooks	o

Which of the following computer devices
or operated?

	<u>Used</u>
115. Card punch	o
116. Card reader	o
117. Color monitor	o
118. CRT or other video monitor	o
119. Floppy disk drive	o
120. Graphics plotter	o
121. Graphics tablet	o
122. Hard disk drive	o
123. Joystick or game paddle	o
124. Light pen	o
125. Magnetic tape drive, including cassette	o
126. Mainframe computer	o
127. Microcomputer	o
128. "Mouse"	o
129. Music board	o
130. Optical scanner	o
131. Paper tape punch	o
132. Paper tape reader	o
133. Parallel or serial interface	o
134. Printer	o
135. Telephone modem	o
136. Voice synthesizer	o
137. Other _____	
138. _____ I have not used any of these devices	

How often do you personally use the following resources to obtain information regarding how to use a computer?

	<u>Often</u>	<u>Sometimes</u>
Manuals supplied by the hardware company or publishers	<input type="radio"/>	<input type="radio"/>
Technical assistance from the vendor	<input type="radio"/>	<input type="radio"/>
School or district-level technical assistance	<input type="radio"/>	<input type="radio"/>
"Users" group	<input type="radio"/>	<input type="radio"/>
Tutorial programs	<input type="radio"/>	<input type="radio"/>
Friends/colleagues/family	<input type="radio"/>	<input type="radio"/>
Reference books	<input type="radio"/>	<input type="radio"/>
Independent technical assistance	<input type="radio"/>	<input type="radio"/>
Professional periodicals	<input type="radio"/>	<input type="radio"/>
Commercial periodicals	<input type="radio"/>	<input type="radio"/>
Local professional organizations	<input type="radio"/>	<input type="radio"/>

How adequate are the following materials or resources for use in the classroom about computers and computing?

	<u>Not Available</u>	<u>Available But Inadequate</u>
Text books	<input type="radio"/>	<input type="radio"/>
Teacher guides	<input type="radio"/>	<input type="radio"/>
Films or filmstrips	<input type="radio"/>	<input type="radio"/>
Video tapes	<input type="radio"/>	<input type="radio"/>
Video discs	<input type="radio"/>	<input type="radio"/>
Workbooks	<input type="radio"/>	<input type="radio"/>
Curriculum guides	<input type="radio"/>	<input type="radio"/>
Software	<input type="radio"/>	<input type="radio"/>
Overheads	<input type="radio"/>	<input type="radio"/>

When initially considering "packaged" computer programs, what factors are each of the following?

Importance

160. The reputation of the program
161. The purpose of the program
162. The data needed to use the program
163. The equipment needed to run the program
164. The "user-friendliness" or ease of use of the materials
165. The author or source of the program
166. Length or complexity of the documentation
167. Completeness
168. Other, please specify _____
169. _____ I do not evaluate computer programs

170. Given the computer hardware in your school, kinds of programs are available for you per all that apply:

_____ Simulations

_____ Business programs (e.g., spreadsheets)

_____ Math or statistics computation

_____ Text editing or word processing

_____ Tutorial programs

_____ Drill-and-practice programs

_____ Data base or file management programs

_____ Graphics programs

_____ Authoring language programs

_____ Telecommunication programs

_____ Compilers

_____ Recreational programs

_____ System utilities

71. How many single-user microcomputers or computers have in your classroom?

_____ Number of single-user microcomputers

_____ Number of terminals

_____ Total

72. Outside of your classroom how many microcomputers or terminals do your students have access to in

_____ Number of single-user microcomputers

_____ Number of terminals

173. Which of the following changes have occurred in the use of computers in class?

_____ Content of courses

_____ Grouping of students

_____ Pacing of instruction

_____ Pedagogical technique

_____ Time for individual attention

_____ I do not use computers in class

_____ There have been no changes

174. Where do you have access to a computer, if any, in all that apply:

_____ I do not have access to a computer

_____ At home

_____ At a friend's home

_____ At someone's place of work

_____ At a college or university

_____ At a library

_____ Other, please specify _____

Have you used the following kinds of program packages?

	<u>School</u>	<u>H</u>
Accounting	o	
Authoring	o	
Business	o	
Communications	o	
Computational	o	
Data base management	o	
Educational	o	
Graphics	o	
File management	o	
Integrated packages	o	
Simulation	o	
Spreadsheets	o	
Statistical analysis	o	
Telecommunications	o	
Utility	o	
Word processing	o	

Which of the following sets of keys on a keyboard operate by "touch" typing? Check all that apply

 Alphabetic

 Numeric

93. How often do you personally use a word processor or a computer dedicated to word processing?

_____ Never

_____ Rarely

_____ Monthly

_____ Weekly

_____ Daily

94. How long have you personally been using a word processor or a dedicated word processor (not necessarily a computer)?

_____ I have not used a word processing program

_____ Less than one month

_____ Two to four months

_____ Five months to a year

_____ 13-24 months

_____ More than 2 years

95. For which of the following types of documents do you use a word processing program or a computer dedicated to word processing? Check all that apply:

_____ Memoranda

_____ Letters

_____ Short reports or compositions (up to 10 pages)

_____ Long reports or compositions (20 or more pages)

_____ Other _____

_____ Not applicable

ch of the following outputs from a computer program produced or had produced for making decisions or solving

	<u>Produced</u>	<u>Have Not Produced</u>
headsheets	<input type="radio"/>	<input type="radio"/>
arts and tables	<input type="radio"/>	<input type="radio"/>
phs	<input type="radio"/>	<input type="radio"/>
wings	<input type="radio"/>	<input type="radio"/>

☐ I have not produced any of these outputs

which of the following uses in the arts have you used? Check all that apply:

☐ In graphic art expression

☐ In musical expression

☐ For creative writing

☐ For choreography

☐ Other _____

202. Computers are frequently used to access the following types of data bases have you used all that apply:

I have not accessed any data ba

Career information

Bibliographical citations (lib)

Stock market

School or district data (person)

Student records

National press wire service

Electronic bulletin board

Computer courseware or other educational materials

Recreational programs

Other

203. For which of the following subject areas do you have the most experience for teaching and learning? Check all that apply.

Art/Graphic Arts

Business Education

Computer Programming

Computer Science

English/Language Arts

Foreign Languages

Health

Home Economics

which of the following subject areas have you
program for teaching and learning that you, yours
that apply:

<input type="checkbox"/> Art/Graphic Arts	<input type="checkbox"/> Industrial
<input type="checkbox"/> Business Education	<input type="checkbox"/> Introduction
<input type="checkbox"/> Computer Programming	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Computer Science	<input type="checkbox"/> Music
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> Performing
<input type="checkbox"/> Foreign Languages	<input type="checkbox"/> Physical Ed
<input type="checkbox"/> Health	<input type="checkbox"/> Science
<input type="checkbox"/> Home Economics	<input type="checkbox"/> Social Stud

which of the following subject areas have you
program in teaching? Check all that apply:

<input type="checkbox"/> Art/Graphic Arts	<input type="checkbox"/> Industrial
<input type="checkbox"/> Business Education	<input type="checkbox"/> Introduction
<input type="checkbox"/> Computer Programming	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Computer Science	<input type="checkbox"/> Music
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> Performing
<input type="checkbox"/> Foreign Languages	<input type="checkbox"/> Physical Ed
<input type="checkbox"/> Health	<input type="checkbox"/> Science
<input type="checkbox"/> Home Economics	<input type="checkbox"/> Social Stud

206. For which of the following subject areas did you use the computerized information retrieval system (a computer) for an activity such as preparing curriculum materials or preparing a science project? Check all that apply.

<u> </u> Art/Graphic Arts	<u> </u> I
<u> </u> Business Education	<u> </u> I
<u> </u> Computer Programming	<u> </u> M
<u> </u> Computer Science	<u> </u> M
<u> </u> English/Language Arts	<u> </u> P
<u> </u> Foreign Languages	<u> </u> P
<u> </u> Health	<u> </u> S
<u> </u> Home Economics	<u> </u> S

QUESTIONS ABOUT DEVELOPING COMPUTER PROGRAMS

207. Which of the following activities have you done with a computer? Check all that apply:

<u> </u> I have not done any of these activities
<u> </u> Loaded a program into memory
<u> </u> Saved a program on a disk, tape, or other storage device
<u> </u> Named or renamed a program file
<u> </u> Listed a program
<u> </u> Backed up a copy of a program or data
<u> </u> Deleted a program from disk or tape
<u> </u> Erased computer memory
<u> </u> Accessed a catalog or menu of saved programs
<u> </u> Run a program

208. In which of the following languages have
Check all that apply:

_____ I have not written a program

_____ APL

_____ Assembly Language

_____ BASIC

_____ COBOL

_____ Other _____

209. What was the length, in lines, of the long
written?

_____ 0, I have not written a program

_____ 1-10 lines or 1 procedure

_____ 11-25 lines or 2-3 procedures

_____ 26-50 lines or 4-10 procedures

_____ 51-100 lines or 11-20 procedures

_____ 101 or more lines or 21 or more proc

210. What is the longest program--written by so
personally modified, edited, or changed in
would perform a different task?

_____ I have never changed a program

_____ 1-20 lines (approximately 1 screen)

_____ 21-40 lines (approximately 2 screens)

_____ 40 or more lines

211. Have you, yourself, written a computer program with the following elements? Check all that apply.

☐ I have not written a program

☐ Repetition or iteration

☐ Conditional decisions ("if, then, else")

☐ Use of variables

☐ Logical operations

☐ Arithmetic operations

☐ Sound output

☐ Graphical output

☐ Using arrays

☐ Using data files

☐ Statements for accepting input from a peripheral device

☐ Format statements or image strings for output on video display, printer or other device

212. Which of the following sources of inaccuracy have you experienced? Check all that apply.

☐ The input data was inaccurate (e.g., wrong field, wrong variable, etc.)

☐ The program "rounded off" inappropriate values

☐ There was a logical error in the program

☐ The input data was called from the wrong field, wrong variable, etc.

☐ The program was inappropriate for the task

☐ Other, please specify _____

☐ None

In which of the following subject areas have you
problem that required organizing a large amount

<input type="checkbox"/> Art/Graphic Arts	<input type="checkbox"/> Industrial
<input type="checkbox"/> Business Education	<input type="checkbox"/> Introduct
<input type="checkbox"/> Computer Programming	<input type="checkbox"/> Mathemati
<input type="checkbox"/> Computer Science	<input type="checkbox"/> Music
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> Performin
<input type="checkbox"/> Foreign Languages	<input type="checkbox"/> Physical
<input type="checkbox"/> Health	<input type="checkbox"/> Science
<input type="checkbox"/> Home Economics	<input type="checkbox"/> Social St

Which of the following aspects of algorithm deve
teach? Check all that apply:

☐ I don't teach any of these

☐ Hand simulation of an algorithm

☐ Ability to recognize basic algorithms (e.g.
ing, making lists of things, repeating a t
reached)

☐ Algorithm testing by "Worst Case" inputs

☐ Design of a set of test data

☐ Determine how many arithmetic computations
complete the algorithm

☐ Relative efficiency of different algorithm
problem

☐ Not applicable

. Which of the following aspects of algorithm
Check all that apply:

_____ Flowcharts or other diagrams of algorithm

_____ English (or other) "pseudocode" for pl

_____ The concept of subtasks or procedures

_____ Top down design ("Consider the whole f

_____ Treatment of error conditions (e.g., t

. Do you use a textbook that shows how to deve

_____ Yes

_____ No

_____ Don't know

. Do you teach students to use a text or refer
algorithms?

_____ Yes

_____ No

_____ Don't know

. Do a majority of your computer programming st
one complete user's guide (of any kind) durin

_____ Yes

_____ No

_____ Don't know

_____ Not applicable

Which of the following aspects of documentation writing do you teach? Check all that apply:

- ☐ Preparation of outlines before writing
- ☐ Teacher approval of outlines before writing
- ☐ Standard components of reference material (summaries, errors, glossary, index, etc.)
- ☐ Use of word processing system to prepare documents
- ☐ Peer review of documents
- ☐ Rewriting and second review by teacher or student
- ☐ Not applicable

Which of the following practices for debugging programs do you teach? Check all that apply:

- ☐ Testing of small pieces of a program before putting them together and tried.
- ☐ Testing a program by putting in the largest and most troublesome inputs.
- ☐ Using "debugging" PRINT or output commands to see where execution is proceeding and what variables are.
- ☐ When a real mystery occurs, dividing the problem with output commands, and successively narrowing location until the error is found ("Divide and Conquer")
- ☐ Performance testing of programs: Measure time required to process various amounts of data

Many schools use computers for re
students and staff. Please answe
your school uses computers for th
apply:

221. Who uses the computer:

_____Principal

_____Teachers

_____Special computer personnel

_____Guidance counselors

_____Secretaries, Clerks

_____Students

_____Other _____

pes of information are maintained in the computer
tudents?

classes requested	_____ Personal
classes enrolled	_____ Attendance
grades received	_____ Class sch
homeroom assignment	_____ Residence
standard test scores	_____ Age (Birth)
honors	_____ Telephone
school enrolled	_____ Other _____

pes of information are maintained in the computer
staff?

salary	_____ Subject & classes
residence	_____ School
years of service	_____ Certificate
educational attainment	_____ Other _____
current grade level of classes	

224. What sorts of summary information do you have in the student record system at your school?

_____ Course enrollments

_____ Student schedules

_____ School or district standardized test scores

_____ Bussing schedules and routes

_____ Attendance records

_____ Room/building utilization

_____ Grade point averages

_____ Class ranks

_____ Other _____

225. Which of the following groups utilize computers at your school?

_____ Administrative personnel

_____ Instructional personnel

_____ Students

_____ Parents

Before deciding to use a computer, people frequently consider factors that might argue against computer use. Which factors did you consider? Check all that apply:

☐ Equipment acquisition costs

☐ Equipment-related costs

☐ Equipment availability (accessibility)

☐ Hardware maintenance

☐ Software maintenance

☐ Software acquisition costs

☐ Software-related costs

☐ Software availability/accessibility/quality

☐ Equipment capacity (memory)

☐ Equipment capacity (CPU)

☐ Textbook availability

☐ Data gathering costs

☐ Data storage costs

☐ Data entry costs

☐ Programming costs

☐ Output capabilities

☐ Other _____

The following administrative tasks may be performed, either directly by a member of your staff, or by an outside contractor. Indicate, for each task, whether the task requires computer assistance, without computer assistance

227. Mathematical calculations, such as those used in maintaining a checkbook
228. Writing letters
229. Operating small appliances
230. Scoring student tests
231. Reporting standardized test scores to parents
232. Maintaining mailing lists
233. Retaining student records
234. Scheduling classes
235. Scheduling transportation
236. Performing statistical analyses
237. Constructing individualized instruction plans (IEP's)
238. Keeping student grades
239. Creating student report cards
240. Operating security system
241. Operating air conditioning/heating system
242. Operating lights
243. Writing payroll checks
244. Operating a sprinkler (fire prevention or landscape watering) system
245. Operating a telephone answering system
246. Labor relations and negotiations
247. Other _____

Which of the following data quality assurance activities have you
done or directed someone else to do? Check all that apply.

☐ Established categories of data to be collected

☐ Identified indicators or measures for data quality

☐ Obtained data

☐ Dealt with missing data

☐ Changed data into a machine-readable format

☐ Verified machine data against raw data

☐ Conducted range check

☐ Examined summary statistics, such as totals, means, and
standard deviations

☐ Other _____

In your school, how often have any of the problems occurred in the past year?

<u>Problem</u>	<u>Never</u>	<u>1-2 Times</u>
49. Intentional equipment damage	o	o
50. Equipment theft	o	o
51. Intentional destruction of data	o	o
52. Unauthorized change of data	o	o
53. Theft of data	o	o
54. Copying copyrighted programs	o	o
55. Theft of passwords	o	o
56. Intentional disruption of operating system	o	o
57. Student cheating on computer projects	o	o

258. In the past year, have you been affected by
your school?

_____ Yes

_____ No

259. If yes, generally how quickly was the error

_____ As soon as it was noticed (i.e., immediately)

_____ Within one day

_____ Within one week

_____ In 1-2 weeks

_____ In 3-4 weeks

_____ It has not been fixed

260. If yes, how much did the error cost?

_____ Don't know

_____ Less than \$50

_____ \$51 - \$500

_____ \$501 - \$5,000

_____ \$5,000+

261. In the past month, have you heard any complaints
from parents about loss of jobs or curtailment
of introduction of computers?

_____ Yes

_____ No

262. In the past month, have you heard any statement that they are using a computer in their

_____ Yes

_____ No

263. Have you ever been required to interact with a machine teller instead of a human teller?

_____ Yes

_____ No

264. In the past month, how many complaints have you received from parents or students regarding computer-related issues?

_____ None

_____ 1-3

_____ 4-10

_____ 11-20

_____ 21+

265. Which of the following actions have you taken to protect your privacy or express your concerns about the possibility of having your information invaded by a computer? Check all that apply.

_____ Omitting certain information when filling out applications

_____ Requesting your name be removed from mailing lists

_____ Declining to provide your social security number

_____ Complaining to government agencies

_____ Writing to a legislator

_____ Writing to the editor of a newspaper

_____ Other _____

6. Which of the following actions have you taken to protect the privacy of entries on a computer system? Check all that apply:

_____ Restricted or limited the data that was entered into the data base

_____ Identified individuals by identification numbers

_____ Stored information necessary to link records at a separate location

_____ Periodically purged data

_____ Encoded all data

_____ Restricted physical access to terminal

_____ Assigned user "log on" ID to restrict access

_____ Encrypted data when transferring from terminal

_____ Restricted physical access to data carrier

_____ I have not taken any such actions

267. Do you (or any member of your family) have

 Yes

 No

268. If yes, about how many minutes per week do

 Minutes

If yes, what proportion of the time that
at home is spent in the following ways?

	<u>Computer Use</u>	<u>Pr</u>
269. Working alone		0%
270. Teaching someone		0%
271. Working together with someone		0%

272. If yes, what proportion of the time that
at home is spent in recreational use (either

 0%

 25%

 50%

 75%

 100%

ANS ABOUT UNDERSTANDING COMPUTER-RELATED CONCEPTS

Which of the following operating systems have you used?

☐ CP/M

☐ Apple DOS3.3

☐ TRSDOS

☐ MS-DOS or PC-DOS

☐ Unix

☐ UCSD-p-system

☐ Zenix

☐ VMS

☐ TSO

☐ Other _____

☐ Don't know

☐ I have not used any operating system

Which of the following data communication equipment have you used?

	<u>Used</u>	<u>N</u>
lem	<input type="radio"/>	<u>U</u>
ial (RS232) or Parallel		
erface	<input type="radio"/>	
t	<input type="radio"/>	
TOCOL Emulator or Converter	<input type="radio"/>	

278. Do you teach about how computers' speeds methods for the same jobs?

_____ Yes

_____ No

_____ Don't know

279. Do you teach about approximately how long week?) it would take a personal computer large business-type computer (such as an sand names alphabetically?

_____ Yes

_____ No

_____ Don't know

280. Do you teach about what things computer the choice of physical computing hardware algorithm, language in which the algorithm

_____ Yes

_____ No

_____ Don't know

281. Do you teach about the relationship among central processing unit, input/output devices, and describe the flow of information

_____ Yes

_____ No

_____ Don't know

2. Which of the following items do you teach so that they can produce a sentence or paragraph in relation to other given terms? Check all

_____ Algorithm	_____ In
_____ Artificial intelligence	_____ In
_____ Assembler	_____ Ma
_____ Batch processing	_____ Me
_____ Central processing unit	_____ Mo
_____ Compiler	_____ Mc
_____ Computer-aided design	_____ Op
_____ Computer-aided manufacturing	_____ Pa
_____ Computer operator	_____ R
_____ Computer programmer	_____ S
_____ CRT terminal	_____ S
_____ Data base	_____ S
_____ Data entry clerk	_____ T
_____ Data processing	_____ T
_____ Disk drive	_____ U
_____ Higher level language	
_____ Information retrieval	

QUESTIONS THAT INVENTORY COMPUTER-RELATED RES

283. Approximately how many instructional so
tutorials, drill-and-practice, etc.) ar
teachers to use on microcomputers in yo

_____None

_____1-10 diskettes full

_____11-20 diskettes full

284. If you wanted to use software packages
in your classroom, where would you most
all that apply:

_____State library or software catalog

_____County library

_____District library

_____School library

_____Informal liaison with other teachers

_____Other _____

_____I have all the software and materi

_____Not applicable

COMPUTER LITERACY

QUESTIONS FOR STUDENTS

QUESTIONS ABOUT ADMINISTERING COMPUTER-RELATED

1. In your school, are there specific rules to the following? Check all that apply:

_____ Protecting equipment from damage

_____ Protecting equipment from loss

_____ Destroying another person's data

_____ Disrupting the operation of the computer

_____ Scheduling or sharing equipment

_____ Scheduling or sharing programs

_____ Copying copyrighted programs

_____ Copying other students' graded computer work

QUESTIONS ABOUT TEACHING WITH OR ABOUT COMPUTERS

2. How often do you use a computer as an aid in demonstrating concepts?

_____ Never

_____ Rarely

_____ Monthly

_____ Weekly

_____ Daily

Listed below are some ways teachers use or
Please check those activities that current
school and those activities that are being

Use

Computer Activity

Cu

3. For numerical calculations
4. To run simulations
5. For instructional games
6. As leisure time activity and reward
7. For student problem solving
8. For drill-and-practice
9. As a tutor (teach content)
10. To demonstrate concepts
11. To score tests
12. As an instructional management aid
13. As a material generator (tests
or worksheets)
14. For information retrieval
15. For student analysis of data
16. For word processing
17. For special needs students
18. To control laboratory equipment

Teach

19. To teach programming
20. To teach computer operation
21. To teach data processing
22. To teach hardware & software procedures
23. To teach history of computers
24. To teach how computers are applied
25. To teach about computer careers
26. To teach about the role and impact of
computers in society
27. To teach problem solving
28. Other, please specify _____

From your experience with using computers in teaching, which of the following have you found to be a disadvantage?

A Dis-
advantage

- | | |
|---|---|
| Lack of access to terminals or microcomputers | o |
| Lack of student interest | o |
| Low quality of educational software | o |
| Reallocation of funds to computers from more pressing needs | o |
| Difficulty with integrating computer-taught skills with the remainder of the curriculum | o |
| Difficulty with managing student use of computers | o |
| Lack of teacher or staff training | o |
| Lack of teacher or staff interest | o |
| Lack of administrative support | o |

From your experience with using computers in teaching, which of the following have you found to be an advantage?

An
advantage

- | | |
|--|---|
| Providing immediate feedback | o |
| Having great patience | o |
| Keeping the learner actively involved | o |
| Providing self-paced instruction | o |
| Keeping records of student performance | o |

QUESTIONS ABOUT USING COMPUTER PROGRAMS

44. What types of computer-related courses have you taken since September 1981? Check all that apply.

_____ Learning a programming language (e.g., BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research applications

_____ Learning data processing

_____ Learning business applications

_____ A general introduction to computing

_____ Learning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

Which of the following computer resources are available at your school?

	<u>Available</u>	<u>Not Available</u>
Card punch	o	o
Card reader	o	o
Color monitor	o	o
CRT or other video monitor	o	o
Floppy disk drive	o	o
Graphics plotter	o	o
Graphics tablet	o	o
Hard disk drive	o	o
Joystick or game paddle	o	o
Light pen	o	o
Magazines	o	o
Magnetic tape drive, including cassette	o	o
Mainframe computer	o	o
Microcomputer	o	o
"Mouse"	o	o
Music board	o	o
Optical scanner	o	o
Paper tape punch	o	o
Paper tape reader	o	o
Parallel or serial interface	o	o
Persons to assist	o	o
Printer	o	o
Reference books and manuals	o	o
Telephone modem	o	o
Textbooks	o	o
Voice synthesizer	o	o
Other _____		

Which of the following computer devices
or operated?

	<u>Used</u>
72. Card punch	o
73. Card reader	o
74. Color monitor	o
75. CRT or other video monitor	o
76. Floppy disk drive	o
77. Graphics plotter	o
78. Graphics tablet	o
79. Hard disk drive	o
80. Joystick or game paddle	o
81. Light pen	o
82. Magnetic tape drive, includ- ing cassette	o
83. Mainframe computer	o
84. Microcomputer	o
85. "Mouse"	o
86. Music board	o
87. Optical scanner	o
88. Paper tape punch	o
89. Paper tape reader	o
90. Parallel or serial interface	o
91. Printer	o
92. Telephone modem	o
93. Voice synthesizer	o
94. Other _____	
95. _____ I have not used any of these devi	

How often do you personally use the following information regarding how to use a computer?

	<u>Often</u>
96. Manuals supplied by the hardware company or publishers	o
97. Technical assistance from the vendor	o
98. School or district-level technical assistance	o
99. "Users" group	o
100. Tutorial programs	o
101. Friends/colleagues/family	o
102. Reference books	o
103. Independent technical assistance	o
104. Professional periodicals	o
105. Commercial periodicals	o
106. Local professional organizations	o

When initially considering "packaged" computer programs, which of the following are most important to you?

- | | <u>Very
Important</u> |
|--|---------------------------|
| 107. The reputation of the program | o |
| 108. The purpose of the program | o |
| 109. The data needed to use the program | o |
| 110. The equipment needed to run the program | o |
| 111. The "user-friendliness" or ease of use of the materials | o |
| 112. The author or source of the program | o |
| 113. Length or complexity of the documentation | o |
| 114. Completeness | o |
| 115. Other, please specify _____ | |
| 116. _____ I do not evaluate computer programs | |

117. Given the computer hardware in your school, what kinds of programs are available for you to use? List all that apply:

_____ Simulations

_____ Business programs (e.g., spreadsheets)

_____ Math or statistics computation

_____ Text editing or word processing

_____ Tutorial programs

_____ Drill-and-practice programs

_____ Data base or file management programs

_____ Graphics programs

_____ Authoring language programs

_____ Telecommunication programs

_____ Compilers

_____ Recreational programs

_____ System utilities

118. How many single-user microcomputers or workstations do you have in your classroom?

_____ Number of single-user microcomputers

_____ Number of terminals

_____ Total

119. Outside of your classroom, how many microcomputers or workstations can you use in your school?

_____ Number of microcomputers

_____ Number of terminals

120. During the school year, when has
school? Check all that apply:

☐ During scheduled class time

☐ Before school or after school

☐ In free periods

☐ On weekends, holidays, etc.

121. Where do you have access to a computer?
all that apply:

☐ I do not have access to a computer

☐ At home

☐ At a friend's home

☐ At someone's place of work

☐ At a college or university

☐ At a library

☐ Other, please specify _____

Where have you used the following kinds of packages?

	<u>School</u>	<u>Home</u>
2. Accounting	<input type="radio"/>	<input type="radio"/>
3. Authoring	<input type="radio"/>	<input type="radio"/>
4. Business	<input type="radio"/>	<input type="radio"/>
5. Communications	<input type="radio"/>	<input type="radio"/>
6. Computational	<input type="radio"/>	<input type="radio"/>
7. Data base management	<input type="radio"/>	<input type="radio"/>
8. Educational	<input type="radio"/>	<input type="radio"/>
9. Graphics	<input type="radio"/>	<input type="radio"/>
0. Home management	<input type="radio"/>	<input type="radio"/>
1. Integrated packages	<input type="radio"/>	<input type="radio"/>
2. Recreation	<input type="radio"/>	<input type="radio"/>
3. Simulations	<input type="radio"/>	<input type="radio"/>
4. Spreadsheets	<input type="radio"/>	<input type="radio"/>
5. Statistical analysis	<input type="radio"/>	<input type="radio"/>
6. Telecommunications	<input type="radio"/>	<input type="radio"/>
7. Utility	<input type="radio"/>	<input type="radio"/>
8. Word processing	<input type="radio"/>	<input type="radio"/>

9. Which of the following sets of keys on a keyboard operate by "touch" typing? Check all that apply.

 Alphabetic

Numeric

. How often do you personally use a word processor or a computer dedicated to word processing?

_____ Never

_____ Rarely

_____ Monthly

_____ Weekly

_____ Daily

. How long have you personally been using a word processor or a dedicated word processor (not necessarily a computer)?

_____ I have not used a word processing program

_____ Less than one month

_____ Two to four months

_____ Five months to a year

_____ 13-24 months

_____ More than 2 years

. For which of the following types of documents do you use a word processing program or a computer dedicated to word processing? Check all that apply:

_____ Memoranda

_____ Letters

_____ Short reports or compositions (up to 19 lines)

_____ Long reports or compositions (20 or more lines)

_____ Other _____

_____ Not applicable

Which of the following outputs from a computer produced or had produced for making decisions o

	<u>Produced</u>	<u>Ha</u> <u>Pr</u>
Spreadsheets	<input type="radio"/>	
Charts and tables	<input type="radio"/>	
Graphs	<input type="radio"/>	
Drawings	<input type="radio"/>	

 I have not produced any of these outputs

To which of the following uses in the arts have
Check all that apply:

 In graphic art expression

 In musical expression

 For creative writing

 For choreography

 Other _____

computers are frequently used to access data bases
following types of data bases have you personally
all that apply:

- ☐ I have not accessed any data bases
- ☐ Career information
- ☐ Bibliographical citations (library)
- ☐ Stock market
- ☐ School or district data (personnel, budget,
- ☐ Student records
- ☐ National press wire services
- ☐ Electronic bulletin board
- ☐ Computer courseware or other educational res
- ☐ Recreational programs
- ☐ Other _____

for which of the following subject areas have you
for teaching and learning? Check all that apply:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Art/Graphic Arts | <input type="checkbox"/> Industrial A |
| <input type="checkbox"/> Business Education | <input type="checkbox"/> Introduction |
| <input type="checkbox"/> Computer Programming | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Computer Science | <input type="checkbox"/> Music |
| <input type="checkbox"/> English/Language Arts | <input type="checkbox"/> Performing A |
| <input type="checkbox"/> Foreign Languages | <input type="checkbox"/> Physical Edu |
| <input type="checkbox"/> Health | <input type="checkbox"/> Science |
| <input type="checkbox"/> Home Economics | <input type="checkbox"/> Social Studi |

For which of the following subject areas have you
program for teaching and learning that you, yours
all that apply:

<u> </u> Art/Graphic Arts	<u> </u> Industrial A
<u> </u> Business Education	<u> </u> Introduction
<u> </u> Computer Programming	<u> </u> Mathematics
<u> </u> Computer Science	<u> </u> Music
<u> </u> English/Language Arts	<u> </u> Performing A
<u> </u> Foreign Languages	<u> </u> Physical Edu
<u> </u> Health	<u> </u> Science
<u> </u> Home Economics	<u> </u> Social Studi

In which of the following subject areas have you
program? Check all that apply:

<u> </u> Art/Graphic Arts	<u> </u> Industrial A
<u> </u> Business Education	<u> </u> Introduction
<u> </u> Computer Programming	<u> </u> Mathematics
<u> </u> Computer Science	<u> </u> Music
<u> </u> English/Language Arts	<u> </u> Performing A
<u> </u> Foreign Languages	<u> </u> Physical Edu
<u> </u> Health	<u> </u> Science
<u> </u> Home Economics	<u> </u> Social Studi

For which of the following subject areas have you used an information retrieval system (computer database) for an activity such as preparing curriculum, preparing a science project? Check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Art/Graphic Arts | <input type="checkbox"/> Industrial Arts |
| <input type="checkbox"/> Business Education | <input type="checkbox"/> Introduction to Computers |
| <input type="checkbox"/> Computer Programming | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Computer Science | <input type="checkbox"/> Music |
| <input type="checkbox"/> English/Language Arts | <input type="checkbox"/> Performing Arts |
| <input type="checkbox"/> Foreign Languages | <input type="checkbox"/> Physical Education |
| <input type="checkbox"/> Health | <input type="checkbox"/> Science |
| <input type="checkbox"/> Home Economics | <input type="checkbox"/> Social Studies |

QUESTIONS ABOUT DEVELOPING COMPUTER PROGRAMS

Which of the following activities have you, or have you plan to, done with a computer? Check all that apply:

- ☐ I have not done any of these activities
- ☐ Loaded a program into memory
- ☐ Saved a program on a disk, tape, or cards
- ☐ Named or renamed a program file
- ☐ Listed a program
- ☐ Backed up a copy of a program or file
- ☐ Deleted a program from disk or tape
- ☐ Erased computer memory
- ☐ Accessed a catalog or menu of saved programs
- ☐ Run a program
- ☐ Tested and debugged a program

In which of the following languages have you written?
Check all that apply:

<input type="checkbox"/> I have not written a program	<input type="checkbox"/> FORTRAN
<input type="checkbox"/> APL	<input type="checkbox"/> Logo
<input type="checkbox"/> Assembly Language	<input type="checkbox"/> Pascal
<input type="checkbox"/> BASIC	<input type="checkbox"/> Pilot
<input type="checkbox"/> COBOL	<input type="checkbox"/> RPG
	<input type="checkbox"/> Other

What was the length, in lines, of the longest program you have written?

☐ 0, I have not written a program

☐ 1-10 lines or 1 procedure

☐ 11-25 lines or 2-3 procedures

☐ 26-50 lines or 4-10 procedures

☐ 51-100 lines or 11-20 procedures

☐ 101 or more lines or 21 or more procedures

7. What is the longest program--written by someone other than you--that you have personally modified, edited, or changed in order to perform a different task?

☐ I have never changed a program

☐ 1-20 lines (approximately 1 screen)

☐ 21-40 lines (approximately 2 screens)

☐ 40 or more lines

Have you, yourself, written a computer program
the following elements? Check all that apply:

☐ I have not written a program

☐ Repetition or iteration

☐ Conditional decisions ("if, then")

☐ Use of variables

☐ Logical operations

☐ Arithmetic operations

☐ Sound output

☐ Graphical output

☐ Using arrays

☐ Using data files

☐ Statements for accepting input from keyboard
peripheral device

☐ Format statements or image strings for output
on video display, printer or other peripheral

Which of the following sources of inaccuracies
have you experienced? Check all that apply:

☐ The input data was inaccurate ("Garbage in")

☐ The program "rounded off" inappropriately

☐ There was a logical error in the program

☐ The input data was called from the wrong memory
(wrong field, wrong variable, etc.)

☐ The program was inappropriate for the problem

☐ Other, please specify _____

☐ None

Which of the following subject areas have you worked on that required organizing a large amount of information?

<input type="checkbox"/> Art/Graphic Arts	<input type="checkbox"/> Industrial Arts
<input type="checkbox"/> Business Education	<input type="checkbox"/> Introduction to Business
<input type="checkbox"/> Computer Programming	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Computer Science	<input type="checkbox"/> Music
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> Performing Arts
<input type="checkbox"/> Foreign Languages	<input type="checkbox"/> Physical Education
<input type="checkbox"/> Health	<input type="checkbox"/> Science
<input type="checkbox"/> Home Economics	<input type="checkbox"/> Social Studies

Which of the following aspects of algorithm development have you studied? Check all that apply:

☐ I haven't studied any of these

☐ Hand simulation of an algorithm

☐ Ability to recognize basic algorithms (e.g., finding a path, making lists of things, repeating a task until a goal is reached, etc.)

☐ Algorithm testing by "Worst Case" inputs

☐ Design of a set of test data

☐ Determine how many arithmetic computations it takes to complete the algorithm

☐ Relative efficiency of different algorithms for a given problem

☐ Not applicable

162. Which of the following aspects of algorithms do you think are important?
Check all that apply:

- ☐ Flowcharts or other diagrams of algorithms
- ☐ English (or other) "pseudocode" descriptions of algorithms
- ☐ The concept of subtasks or procedures
- ☐ Top down design ("Consider the whole problem first, then work on the details")
- ☐ Treatment of error conditions (e.g., division by zero)

163. Do you have a textbook that shows how to design algorithms?

- ☐ Yes
- ☐ No
- ☐ Don't know

164. Do you look up algorithms in a text book or do you figure them out on your own?

- ☐ Yes
- ☐ No
- ☐ Don't know

165. Have you written at least one complete program during your school career?

- ☐ Yes
- ☐ No

☐ Don't know

☐ Not applicable

6. Which of the following aspects of documentation writing have you studied? Check all that apply

- ☐ Preparation of outlines before writing
- ☐ Teacher approval of outlines before writing
- ☐ Standard components of reference materials (summaries, errors, glossary, index, etc.)
- ☐ Use of word processing system to prepare documents
- ☐ Peer review of documents
- ☐ Rewriting and second review by teacher or others
- ☐ Not applicable

7. Which of the following practices for debugging programs have you studied? Check all that apply

- ☐ Testing of small pieces of a program before putting them together and trying the whole program
- ☐ Testing a program by putting in the largest and most troublesome inputs
- ☐ Using "debugging" PRINT or output commands to see where execution is proceeding and what the values of variables are
- ☐ When a real mystery occurs, dividing the program into sections with output commands, and successively narrowing down the location until the error is found ("Divide and Conquer")
- ☐ Performance testing of programs: Measuring the time required to process various amounts of data

Many schools use computers for recording students and staff. Please answer the f your school uses computers for this purp

168. Who uses the computer:

_____Principal

_____Teachers

_____Special computer personnel

_____Guidance counselors

_____Secretaries, Clerks

_____Students

_____Other _____

169. What types of information are maintained about students? Check all that apply:

_____ Classes requested

_____ Classes enrolled

_____ Grades received

_____ Homeroom assignment

_____ Standard test scores

_____ Honors

_____ School enrolled

_____ Personal profile

_____ Attendance

_____ Class schedule

_____ Residence

_____ Age (Birth date)

_____ Telephone number

_____ Other _____

170. Before deciding to use a computer, people consider factors that might argue against computer use. The following have you considered? Check a

_____ Equipment acquisition costs

_____ Equipment-related costs

_____ Equipment availability (accessibility)

_____ Hardware maintenance

_____ Software maintenance

_____ Software acquisition costs

_____ Software-related costs

_____ Software availability/accessibility

_____ Equipment capacity (memory)

_____ Equipment capacity (CPU)

_____ Textbook availability

_____ Data gathering costs

_____ Data storage costs

_____ Data entry costs

_____ Programming costs

_____ Output capabilities

_____ Other _____

QUESTIONS ABOUT UNDERSTANDING SOCIAL ISSUES RELATED

. Which of the following data quality assurance
done? Check all that apply:

 Established categories of data to be collected

 Identified indicators or measures for data quality

 Obtained data

 Dealt with missing data

 Changed data into a machine-readable format

 Verified machine data against raw data

 Conducted range check

 Examined summary statistics, such as totals,
 standard deviations

 Other _____

In your school, how often have any of
problems occurred in the past year?

		<u>Never</u>	<u>1</u>
	<u>Problem</u>		
172.	Intentional equipment damage	o	
173.	Equipment theft	o	
174.	Intentional destruction of data	o	
175.	Unauthorized change of data	o	
176.	Theft of data	o	
177.	Copying copyrighted programs	o	
178.	Theft of passwords	o	
179.	Intentional disruption of operating system	o	
180.	Student cheating on computer projects	o	

181. In the past year, have you been at your school?

 Yes

 No

182. If yes, generally how quickly was

 As soon as it was noticed (i

 Within one day

 Within one week

 In 1-2 weeks

 In 3-4 weeks

 It has not been fixed

183. If yes, how much did the error co

 Don't know

 Less than \$50

 \$51 - \$500

 \$501 - \$5,000

 \$5,000+

184. In the past month, have you heard a job or having a job made part-t

 Yes

 No

185. In the past month, have you heard using a computer in their work?

 Yes

186. Have you ever been required to interact with
would have preferred to interact with a person
machine teller instead of a human teller)?

_____ Yes

_____ No

187. Which of the following actions have you taken
concerned about the possibility of having your
invaded by a computer? Check all that apply

_____ Omitting certain information when filling out
_____ cations

_____ Requesting your name be removed from a list

_____ Declining to provide your social security number

_____ Complaining to government agencies

_____ Writing to a legislator

_____ Writing to the editor of a newspaper or magazine

_____ Other _____

_____ I have not taken any such actions

188. Which of the following actions have you taken to protect the privacy of entries on a computer system? Check all that apply:

_____ Restricted or limited the data that was entered into the data base

_____ Identified individuals by identification numbers or names

_____ Stored information necessary to link data to a separate location

_____ Periodically purged data

_____ Encoded all data

_____ Restricted physical access to terminals

_____ Assigned user "log on" ID to restrict access

_____ Encrypted data when transferring from one location to another

_____ Restricted physical access to data center

_____ I have not taken any such actions

189. Do you (or any member of your family) ha

_____Yes

_____No

190. If yes, about how many minutes per week

_____Minutes

If yes, what proportion of the time that
at home is spent in the following ways?

Computer Use

191. Working alone

192. Teaching someone

193. Working together with someone

194. If yes, what proportion of the time that
at home is spent in recreational use (ex

_____0%

_____25%

_____50%

_____75%

_____100%

QUESTIONS ABOUT UNDERSTANDING COMPUTER-RELATED CONCEPTS

1. Which of the following operating systems have you used?

☐ CP/M

☐ Apple DOS3.3

☐ TRSDOS

☐ MS-DOS or PC-DOS

☐ Unix

☐ UCSD-p-system

☐ Zenix

☐ VMS

☐ TSO

☐ Other _____

☐ Don't know

☐ I have not used any operating system

2. Which of the following data communication equipment have you used?

	<u>Used</u>	<u>Not Used</u>
1. Modem	<input type="radio"/>	<input type="radio"/>
2. Serial (RS232) or Parallel Interface	<input type="radio"/>	<input type="radio"/>
3. Port	<input type="radio"/>	<input type="radio"/>
4. Protocol Emulator or Converter	<input type="radio"/>	<input type="radio"/>

200. Have you studied any specific details a compare to non-computer methods for the

_____ Yes

_____ No

_____ Don't know

201. Do you know approximately how long (a mi would take a personal computer (such as business-type computer (such as an IBM 3 names alphabetically?

_____ Yes

_____ No

_____ Don't know

202. Have you studied what things computer spe the choice of physical computing hardware algorithm, language in which the algorithm

_____ Yes

_____ No

_____ Don't know

203. Have you discussed the relationship among central processing unit, input-output devi and described the flow of information and

_____ Yes

_____ No

_____ Don't know